the NORTHWESTERN MILLER

THE INTERNATIONAL NEWS MAGAZINE FOR THE GRAIN, MILLING AND BAKING INDUSTRIES

Old Dad Fetchit

INSIDE YOU'LL FIND . . .

Bringing Millers To Meetings

Latin American Report

MILLING TECHNOLOGY FEATURES

Transient Dynamics Of Free Swinging Sifters

Studies of Size Classification Indices (Part I)

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Volume 265 JANUARY 9, 1961 Number 1

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the NORTHWESTERN MILLER

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COVER PICTURE—

Old Dad Fetchit is a philosopher and something of his history is told on page 7 of this issue. The cover picture is a photograph of an original painting by the famous American artist, Edward Windsor Kemble. The sketches which appear in the feature were the work of another famous artist, George Graves, who was a member of The Miller's staff for 40 years in the days before newspapers used photographic reproduction to the extent they do today.

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Recruitment for the Milling Industry

WHAT PROMPTS A BOY'S DECISION to enter the legal, medical, engineering, architectural or any one of the other professional groups? Sometimes family influence; more often interest in a chosen field is aroused in high school.

A teacher or counsellor might have provided the motivation as a result of an aptitude test, but it is more than likely that enthusiasm was aroused by personal contact in school with a lawyer, a doctor, an engineer or an architect. Many professional bodies make it a practice to have their representatives visit high schools in an effort to interest recruits in the opportunities they have to offer. They realize that new blood must be pumped into the old.

The milling industry does not have a record of enterprise or forcefulness in the recruitment field as far as going out into the high schools is concerned. Some millers have done it, but their number is miserably small. Many men have merely drifted into milling—and scores of them have made good millers. But the industry, over the past few decades, has probably lost more men than it has gained, because the opportunities for "professional" training were not clearly explained.

The flour milling business—and the baking business—needs new operational blood. There is a shortage of well trained people. The complexities of the milling process today require the services of the college-trained mind. For instance, he who doubts the scientific complexity of milling today should take a look at the article beginning on page 32 by Pillsbury's Rezsoe Gracza entitled Studies of Size Classification Indices. This particular exposition effectively illustrates the advanced state of current milling techniques. It is essential information for men who are trying to keep up with day-to-day developments in the industry.

The millers have been advised by their own Millers Advisory Council to K-State to get out into the high schools in an effort to attract more young men into the industry. As a sales tool, the university, with the financial aid of the Millers National Federation, has provided an attractive brochure detailing what may be gained by studying at K-State "the only institution of higher learning in the world offering a specific curriculum leading to a university degree in milling technology."

Copies have been sent to every mill in the country and operative millers and cereal chemists wishing to help in this recruitment drive may obtain a copy from their front offices. If not, they should write to Dr. John A. Shellenberger, Department of Flour and Feed Milling Industries, Kansas State University, Manhattan, Kansas, and he will see supplies are provided. There are 10,000 of them in existence and it is up to members of the industry to use them effectively.

As our story on page 10 relates, the facilities at K-State are rapidly being readied for action on an extended scale and 200 students can be handled by next fall. It is the duty of the industry to see that these students are forthcoming in order to justify the time and money expended in providing what is undoubtedly the best facility of its kind in the world.

The advisory council emphasizes that only individual millers, men with experience in the industry, are qualified to advise youths on the advantages of milling as a career. "Nothing short of personal contact will get the job done," the council declares.

The milling curriculum at Kansas State University is of top quality, demanding top quality students. And that is exactly what the industry needs. «

The Story of Old Dad Fetchit

THE OTHER DAY, one of our readers, an up-and-coming operative miller, asked: "What gives with this Fetchit character?" To translate from his modern vernacular, he wished to know more about this homely philosopher whose quaintly phrased, humorously illustrated sayings form a continuous commentary upon the fundamental foibles and virtues of milling and millers, on politics and politicians and on life in general.

We will satisfy this natural curiosity for there must be many among Old Dad Fetchit's fans who are not familiar with the background and history of this fabulous etre de raison.

And fabulous he is. And he is an imaginary being, a creation of the brain of the late Robert E. Sterling, one time editor, board chairman and manager of the Kansas City office of this publication. Beginning nearly 60 years ago as a vehicle for some homespun philosophy, the Fetchit characterization gradually evolved into the story of a man, a crick miller, his family and his friends in the milling business—and a man holding some very firm political views. You could call him a conservative.

After Mr. Sterling's retirement, the mantle of Old Dad Fetchit fell upon the worthy shoulders of Editor Carroll K. Michener, himself an erudite philosopher. Mr. Michener carefully and cleverly made the necessary changes to keep Old Dad in tune with modern conditions and developments, never once destroying the flavor of the originals.

When he retired in 1957, Mr. Michener "bequeathed" his collection of Fetchitana to the present Editor who confessed himself flummoxed by the language or dialect of the aged philosopher and decided to retire him, along with Mr. Michener.

However, last spring, when the new Northwestern MILLER was announced at a gathering of milling industry executives, many of them, though applauding the onward march of progress which prompted the change in format and editorial concept, said that the past should not be forgotten. They requested the return of Old Dad Fetchit for they found joy, and sometimes inspiration in his philosophy. And much of what he has said over a period of six decades is as applicable today as it was when written by Mr. Sterling.

One of the Fetchit supporters is Ellis D. English,

EDITORIAL OPINION

Archer-Daniels-Midland Co., president of the Millers National Federation. Perhaps Mr. English recognizes Mr. Fetchit as a fellow-Arkansan. Our research places the Fish River Roller Mills in the Ozarks in northern Arkansas. But there are conflicting stories as to who built the mill in the first place.

Back in 1948, we find Mr. Sterling reporting Dad as saying: "Don't seem so far back when Gramp' Fetchit used to tell about his fetchin' his family from back beyond the Great Smokies an' gittin' hisself a little mill back there in Tennessee an' then it seems like jes' a little spell later on that Mis' Fetchit an' me got hitched an come out here into these hills (the Ozarks) an' jes' like Gramp' done, I got me this little mill and settled down . . . "

But in 1923 Mr. Sterling reported it differently. At that time, Old Dad stated that Gramp' did custom grindin' in Car'lina all his life in a mill run by his family for three generations back. Gramp' never moved out of Car'lina and "raised up my Paw in the business an' taught Uncle Marmaduke Fetchit, who kind of brung me up when Paw died, all he knew to start with. It was when he was teachin' Uncle Duke that Gramp' used to say that nobody ever did any good at millin' less'n his toll dish was deep. 'Deep dish deep dipped,' he'd say, 'an' the miller won't starve'."

Mr. Sterling went on to say that it was Uncle Duke Fetchit who brought his family and Old Dad, then known as young Andy, out to Tennessee where they'd got to growing a fair amount of wheat. That move was made shortly before Gramp' died and it is presumed that the old gentleman remained at home in Car'lina.

R. E. Sterling

Subsequently, Uncle Duke decided to move farther west and he founded the Fish River Roller Mills in northern Arkansas.

Mr. English once told us that the dialect in the Fetchit stories is reminiscent of Arkansas. But Martin E. Newell, now manager of the Kansas City office and closely associated with Mr. Sterling for many years, says that the dialect used is not intended to be representative of any particular area. And a language expert, to whom we submitted the problem, says there are traces of words and idioms commonly used in the Carolinas and Tennessee, as well as many from Arkansas.

Interest in Dad Fetchit lies in the fact that his experiences and problems closely match those of the reader, particularly the miller-reader. He has had his troubles. We do know that Mis' Fetchit bore him a set of twins but they died in infancy. That was just after Uncle Duke had sunk a whale of a lot of money in a modernization program, not just purifiers but rolls for grinding and a new turbine wheel sent up from St. Louis. When the job was completed, the Fish River ran dry and the mill could not operate for some months and, as Dad said later, "Danged if Uncle Duke didn't up and die hisself," leaving a whopping mortgage on the mill. The pickings were thin for the Fetchits in those days.

But soon quality paid off and Fetchit's Pride became a household word in the neighborhood and the mill prospered, the while Old Dad could turn his scathing and blistering wit on the more rascally of his competitors.

The Fetchits were blessed with a son—young Bill—who now runs the front office and who brought many new ideas to the business, not all of them to the liking of the old man. Dad's greatest fear is that one day young Bill might follow the family tradition of headin' west, perhaps landing in Texas "where the Lord only knows what might chance him."

The many appreciative comments voiced by readers since Old Dad came out of retirement last summer insure that he will be retained as a contributor for many years to come. He is unique in the publishing history of North America, appearing regularly, with the exception of a three year break, for well nigh 60 years, and if that is not a record for one character, it ought to be. His philosophy has endeared him to many people.

Carroll K. Michener

It is this reaction to the Fetchit feature which caused us to examine ways and means for preserving him in more permanent form. With this in mind, Mr. Michener has agreed to start work on a small book, "The Life and Times of Old Dad Fetchit." The story of the Fetchit family, their miller-friends and their reactions to the burning issues of their days will make a fascinating recital.

One thing is sure to emerge—the problems of today are really no different from those of yesterday. «

Reduced Insurance Rates in Pneumatic Mills?

SHOULD MILLS EQUIPPED with pneumatics pay lower insurance rates than mills not so equipped? Some members of the milling industry think they should and the insurance people have expressed a willingness to give heed to their case.

The National Fire Protection Assn. has arranged for industry members to meet with its committee on dust explosion hazards at the Hotel Manhattan in New York on Jan. 24 at 9:30 a.m. Represented will be the Millers National Federation and the Association of Operative Millers through prominent trade figures with a wide experience in pneumatic handling — that means operative millers as well as the insurance officers of the mills.

Just how great is the risk of explosion in a pneumatic mill? Is the risk greater or smaller than in a conventional plant? Back in 1956, some German research men asked themselves these two related questions and determined to come up with an answer.

Tests were carried out by the Institut fuer Bauforshung in Hanover, Germany, in cooperation with MIAG, the milling machinery firm with headquarters in Brunswick. A test mill was constructed and included was a specially prepared test conveying system.

The investigation, carefully planned and executed, indicated that an explosion in a pneumatic mill is virtually impossible. The report, now considered to be a classic in the field, was published in THE MILLER in the issue of Nov. 13, 1956.

Of course, the reduction of fire and explosion danger by installing a pneumatic conveying system, as proven by the results of the investigation, should not give way to the belief that general safety precautions in flour mills should be relaxed. The opposite is true and the insurance men will be quick to point this out, even if they accede to industry feeling that reduced rates are in order. «

INDUSTRY RECORD . . .
An account of Trade Affairs and Events

United States:

Board of directors of General Mills, Inc., has declared a dividend of 30¢ a share of common stock, payable Feb. 1 to stockholders of record Jan. 10. This is 130th consecutive quarterly dividend on GMI common stock.

●

Licensing Agreement To Sell Flour

Republic Flour Mills of the Philippines has concluded licensing agreement with Fisher Flouring Mills Co., Seattle, to mill Fisher bakery brands formerly imported. Brands are "Solo," "Sombrero," "Liberty" and "Big Gun."

●

Construction Started On Grain Storage

Construction of 10 concrete grain storage tanks and concrete headhouse started at Council Bluffs, Iowa, by Omaha Elevator Co., affiliate of F. H. Peavey & Co., Minneapolis. Tanks will have capacity of 500,000 bu., says **R. B. McWhite**, vice president and general manager. New facility is additional to 120,000 bu. storage capacity already in place at company's Missouri River docksite.

●

Special Laboratory Purchased at Omaha

Doty Laboratories Corp. has purchased special laboratory — but not protein laboratory—of Omaha Grain Exchange. **E. J. Rosse** will be in charge of the operation. Purpose now is for Doty to offer complete analytical service to flour, baking, grain, feed and fertilizer industries in Omaha laboratory as well as in Kansas City laboratory.

●

Grain Augers Sold For Use in Australia

Koyker Manufacturing Co., Hull, Iowa, has sold 20 "Big Dipper" grain augers for shipment to Australia for big volume handling of grain. Units are heavy duty, portable, 72 ft. in length with 10 in. auger tube diameter, can handle 5,000 bu. grain hourly. Will be used principally for handling wheat in commercial elevators owned by Grain Elevator Board, Melbourne, which controls storage facilities for 92 million bushels of grain in heart of country's grain producing area.

●

Pillsbury's Sales, Earnings Increase

Pillsbury Co.'s earnings after taxes of $3,732,000 represent 14.4% gain for six months ended Nov. 30, 1960, while net sales of $183,023,000 up $1,223,000 over same period of previous year. Net earnings per share of common stock $1.72 compared with $1.52 a year ago. Advance in earnings, states **Paul S. Gerot**, president, resulted from more favorable mix of sales, better utilization of resources through improved efficiencies in plants, and new products.

●

Export Subsidy On Durum Wheat

U.S. Department of Agriculture has restored export subsidy on durum wheat. Starting point pegged at 61¢ bu., or 1¢ less than for hard spring wheat. Subsidy applies only to durum shipped from East Coast and Gulf of Mexico ports. When St. Lawrence Seaway opens, subsidy will be dropped to 52¢ bu. for 45-day period, after which program will be re-evaluated. Subsidy was removed over year ago because production level was just about sufficient for domestic consumption. However, stocks now on hand amount to 50 million bushels, compared with domestic demand of about 26 million bushels a year.

●

Meissner to Engineer Milling Facility

Meissner Engineers, Inc., Chicago, being retained to engineer, supervise construction of what reportedly will be largest corn wet milling facility in South America. Will be $10 million plant for Refinancoes de Milbo, Brazilian affiliate of Corn Products Refining Co., at Mogi-Guacu, 100 miles northwest of Sao Paulo, Brazil. Completion scheduled for August, 1962, says **Edmond A. Siebert, Jr.**, vice president of Meissner.

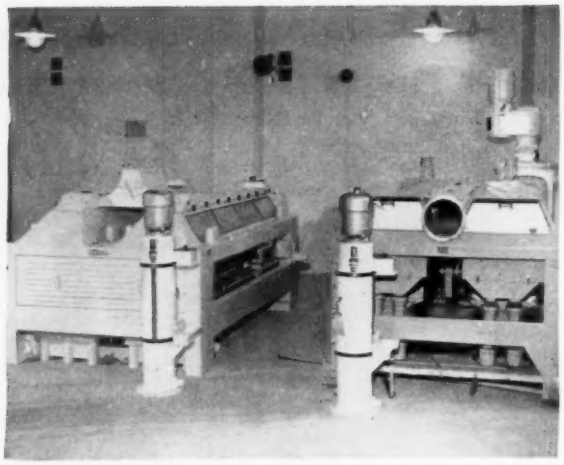
●

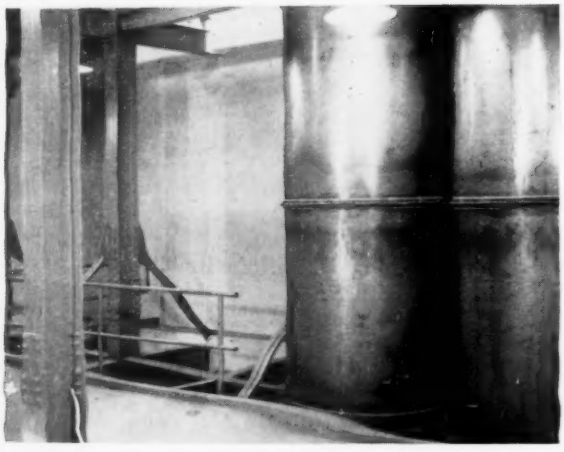
Australia:

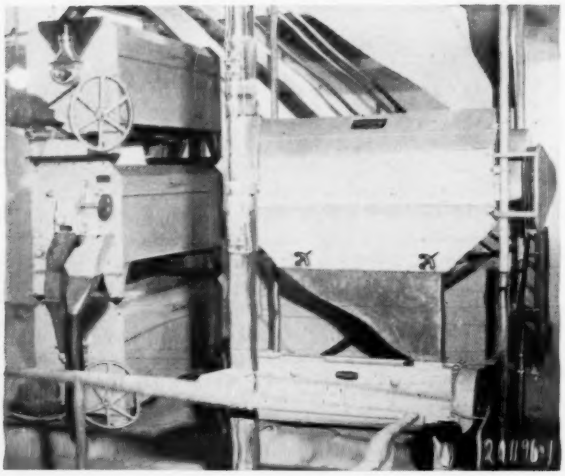
Chairman of Australian Wheat Board announced that another 160,000 tons of wheat would be sold to China and Italy at "satisfactory current prices." Of the total, 60,000 earmarked for China through Hong Kong; 100,000 tons for Italy would bring to 900,000 tons that country's recent purchases. Latest consignment to China is additional to sale of 240,000 tons announced in mid-December. «

THIS NEW BUILDING in Golden Valley, Minn., a suburb west of Minneapolis, will house the Buhler Corp. when ready about May 1. The firm represents a merger of Buhler Mill Engineering Co., Minneapolis, and Buhler Brothers, Inc., Englewood, N.J., both subsidiaries of Buhler Bros. of Uzwil, Switzerland. C. R. Moor, executive vice president of the Minneapolis firm, will be president of Buhler Corp. The new 18,000 sq. ft. building is a hyperbolic concrete parambuloid-type structure. Patch & Erickson are the architects. A new Buhler assembly plant for chain conveyors and pneumatic conveying units also is scheduled to be opened in the Minneapolis suburb of St. Louis Park within a few months.

Report to Millers, Suppliers







THOUGH THE MEN who have had the doing of it confess to anxieties and frustrations, the first-time visitor to the new Kansas State University pilot flour mill and associated facilities at Manhattan sees no sign of them. They are now things of the past and they have left no visible marks on the professorial countenances of faculty members John A. Shellenberger and Eugene P. Farrell.

To the observer, aware of the enormity and complexity of the project, that which has been accomplished so far is nothing short of astonishing.

With quiet confidence and maximum efficiency, the officers of K-State, three years and four months after the disastrous fire which took away the mill and so much of their teaching and administrative facilities, are on the road back to 100% capacity.

The anxieties came from the lack of availability of adequate funds; the frustrations from the slowly developing processes of accomplishment. Though it took time, the wise legislators of the state of Kansas recognized the contribution they and the taxpayers had to make to bring their university back to the maximum level of usefulness. And by the time all is finished, a sum measured in millions will have gone into the new building.

Trade Contributes

There were anxieties, too, concerning the willingness of the millers and their suppliers, all of whom stood to gain by making the flour milling department an effective agent of education, to provide the necessary additional financing and equipment. Those anxieties have been allayed.

The millers themselves have provided more than $200,000 in cash contributions with John Vanier, Western Star Mill Co., Salina, Kansas, in the van of the campaign. And Steve Vesecky, Campbell-Taggart Associated Bakeries, Inc., corralled his fellow-bakers to the tune of *more than $35,000. More names could be mentioned*—the wheat growers insisted on participation—but at least *something should be recorded of the work of R. B. Laing,* Abilene Flour Mills Co. As the energetic chairman of the *Millers Advisory Council to the university he has spark-plugged Operation Pilot Mill.* Drafted into the job, he has endowed it with the talents of organization, persuasion *and charm which make him a popular figure in the mill-*ing industry.

The milling equipment manufacturers, spurred by James C. McNeil, the Pillsbury Co., who headed up a special machinery committee, have provided material to the value of more than $200,000. That material has come, or is coming, from all parts of the U.S., from England, from Switzerland, Germany and Italy.

Anxious and frustrated as they may have been at times, Dr. Shellenberger, Prof. Farrell and their associates have cause to be gratified at the response of the industry they themselves serve so well. And they are enthusiastically grateful—not for themselves but for the chance to provide even finer training facilities than before for budding operative millers, cereal chemists and the other professional people who are needed in modern flour milling and associated industries. And these are the men who will be the executives of tomorrow.

More work has to be done before the premises will be ready for dedication probably next May. There are still many imponderables, many things that could cause

On K-State's New Pilot Plant

delay but already a mill is taking shape with a team of millwrights working carefully but with purpose to complete the work.

There is nothing frilly about the premises. They have the coldness and the austerity of the schoolroom, but the laboratories, the offices and the appurtenances to scholastic endeavor and research are light and airy.

The entrance hall is severe, though a mosaic pattern lifts the austerity somewhat. The various floors of the mill are a hive of activity—the manlift is already operating—and some of the machinery in the appointed place, ready for final installation.

The first picture, top left, is typical of the scene meeting the eye of the visitor. Here are the purifiers provided by Henry Simon, Ltd., of England, in concert with its U.S. affiliate, Simon-Carter Co., and Thomas Robinson & Son, also of England. In the foreground are two Paradox bran and shorts dusters . . . and in the right background an Entoleter Scourer-Aspirator.

But before continuing the tour let's pause and take a look at that yawning space next to the four 48 in. diameter storage bins. In that empty slot and adjoining thereto in **middle picture on the left,** there is room for 10 more similar bins and they are sorely needed. The officials are waiting with open hands for a donation—and since the bins will be used also by the adjoining feed technology school, they are looking hopefully in the direction of the feedstuffs industry which was so generous some years ago.

Also needed, the visitor is reminded by tour guides Prof. Farrell and Prof. Royce Pence, are 12 to 15 small motors in the 1, 2, 3 and 5 h.p. range, totally enclosed, fan cooled, 440 volt, 3-phase; one filter dust collector (capacity 4,000 cu. ft. per min.), three centrifugal fans having a capacity of 1,500 to 2,500 cfm and six small Airlock feeders.

The picture at bottom left continues the pictorial tour. Visible is a Superior (Daffin Corp.) separator at the left, and a Simon-Carter disc separator at the right.

Top picture at the right shows sifters from the Great Western Manufacturing Co. and SMICO in the foreground. A Nor-Vell sifter is in position in the background. A SMICO double flour agitator in the right foreground is partly visible and on the floor are Simon-Carter sifter stub spouts.

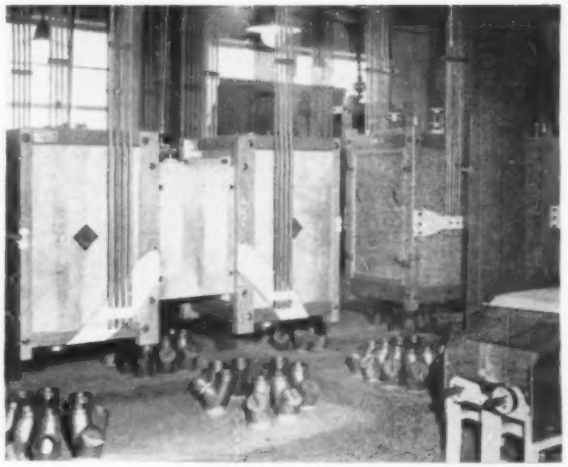
The middle picture shows Dale Eustace, a graduate student, explaining the Forsberg Vacuum Stoner and Gravity Sifter.

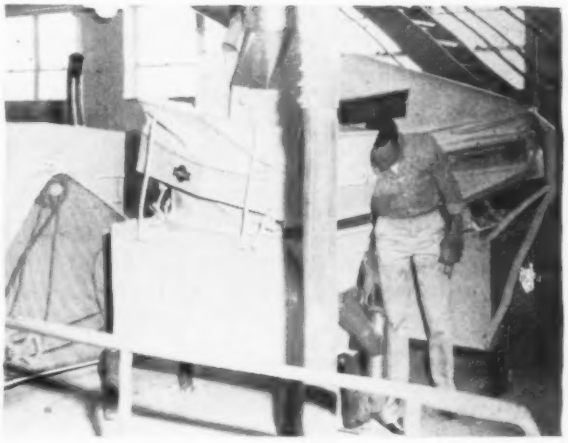
The picture at bottom right finds Dale Richards, electrician, examining the Kice cyclone dust collectors, Simon-Carter millerators, MIAG pneumatic separator and Entoleter Scourer-Aspirator.

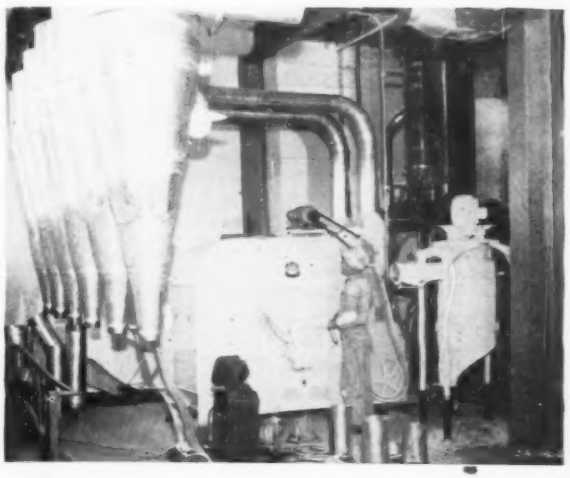
This tour report does not cover anywhere near the extent of the gifts. Listed among the donors are some of the most famous names in flour business. Nearer the dedication date a full list of contributors will be published.

The K-State men have still one gnawing anxiety—they are concerned that five out of the nine roller mills donated may not be on hand when all the machines now moving into position are ready to start up. These are coming from Buhler of Switzerland, Ocrim of Italy and Turner of England.

But those taking this tour have seen enough to know that their money has been well spent, that their equipment will have a worthy site, to be used and operated by the flour producers of the future. «







Squeeze Play for Soft Red Winter Wheat?

If the New Administration Cuts Acreage Allotments It May Hear a Rumble Unequalled Since Bull Run

By F. C. BISSON

Chicago Special Correspondent

AS MR. KENNEDY'S entourage of bright and shining youngsters check their road maps and mount white chargers bound for Washington, one group in particular — among many — sits tense and expectant. It is composed of soft red wheat growers and flour millers most vitally concerned with the soft red wheat product. President-elect Kennedy, like his Republican opponent, failed to spell out what he may have in mind in the way of farm legislation. But the inference is for higher support prices. And if this means drastic cuts in acreage allotments, no Congressman will need an ear trumpet to hear the roar of protest from agricultural areas. And any farm state Congressman who votes for it may as well buy a round trip ticket with a two-year expiration date, because he'll soon be back in Eagles Nest or Cranberry Center, with his designation as M.C. (member of Congress) changed to P.C. (private citizen).

F. C. Bisson

And the soft red wheat people, who have watched their production relative to other classes fall perceptibly for eight years, can be expected to fire a blast toward Washington which will make the "shot heard 'round the world" sound like the snap from a cap pistol!

'But He's Still Strong'

Despite legislative wrestling, "Old Man Wheat Surplus" is more virile, more impossible of defeat. How futile governmental effort has been is best shown by the accompanying chart prepared by the U.S. Department of Agriculture (table 1, page 14).

We'll not labor the point much more before getting down to soft red winter wheat. But it is well to point out that the total U.S. supply of wheat in all classes on July 1, 1960, actually was 931 million bushels larger than 10 years ago, despite the government's frantic efforts to reduce the supply!

Of course, we've been leading up to what this means to the soft red wheat miller, considering the brand new national administration scheduled to take over, the possible changes in farm legislation, and related factors.

Agricultural Secretary

Millers, particularly those who produce soft red wheat flour, should be greatly interested in the President-elect's selection of a new secretary of agriculture.

- He bends the knee at the altar of higher support prices.
- He tempers this with insistence that, if these are provided, they must be accompanied by very strict production controls.

Admittedly, there were many bills calling for higher support prices which never were introduced during the past two years because of knowledge that a certain veto would be met, even if they did get as far as the White House.

It's fairly certain these will be submitted again; and there seems a better-than-even chance for some very definite provision in the law as eventually passed calling for smaller acreage allotments.

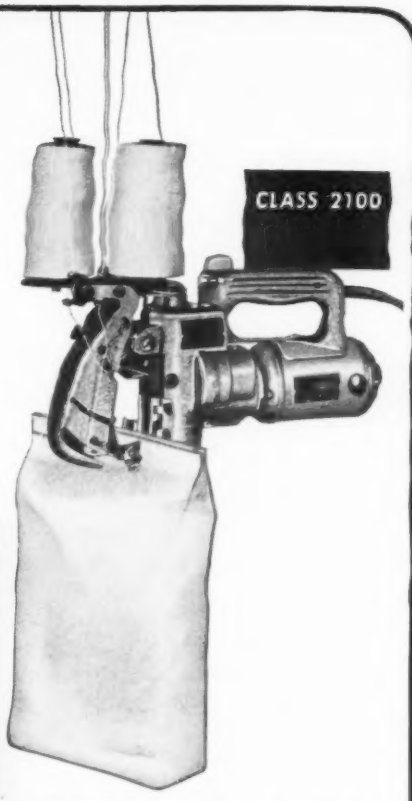
Table II shows domestic disappearance of soft red winter wheat has been fairly stabilized the past five years at 132 and 137 million bushels, for an average of 134 million bushels. Production of soft red has ranged between 159 and 195 million bushels, averaging 180 million. In other words, while variation in annual domestic disappearance of red winters has been almost negligible, there has been a variation of 36 million bushels in the amount grown during the past five years.

Exports (not shown in the table) during the five years varied rather widely, too, from a low of only 30 million bushels in the 1957-58 crop year to a high of 60 million bushels the previous year, and a projected total of almost as much (59 million bushels) for the current crop year. In other words, there has been as much as 100% variation within two successive years in soft red winter wheat moved out of the country.

Percentagewise, the amount of soft red grown in the U.S. compared with all classes combined has fallen per-

Said Old Dad Fetchit of the Fish River Roller Mills last week: "These here slantin' roofed orators an' prophets that's goin' around sayin' maybe the earth's likely to be took over by the Lumbumbas an' Khruschovies an' get nervous like 'bout that plague-took rascal Castrato gets me considerable riled up. Why, dang it, all any man's got to do right now is to see what's in front of his eyes, stop chewin' his tranquilizators an' be everlastin' an' eternally thankful that a New Year's here with every promise that God Almighty, with the help of His servants here on earth, is goin' to run things His way, with His fairness, His justice an' the kind of peace He promised nigh on two thousand years ago."

NEW! Portable Electric Bag Closing Machine



HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

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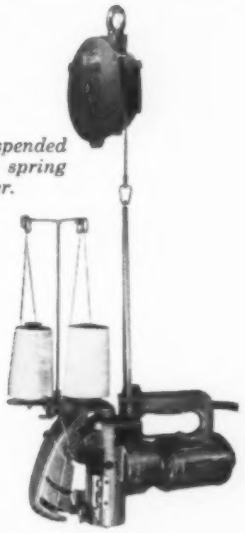
Machine suspended by top lock spring balancer.



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ceptibly, as Table III covering the past eight years shows.

This dwindling percentage of soft red wheat production on one hand and the ascending bushelage of soft red winters moving into export channels on the other pulls the spotlight onto supply and demand.

The government was sharply criticized by soft wheat millers the past crop year for exercising too lavish a hand in granting authorizations for exports of soft red. But the governmental agency controls such matters only under Public Law 480—it can't govern export sales for dollars. And it so happens some foreign countries have come up with "cash on the barrelhead," leaving USDA without jurisdiction.

Barge loads of soft red winters bound for the Gulf have streamed out of Chicago for some time, and inroads on stocks have been heavy. Roughly, inspections covering such barge shipments during December aggregated about 1,750,000 bu.

TABLE II

ESTIMATED SUPPLY AND DISTRIBUTION OF U.S. WHEAT

(000,000's omitted)

	—Carryover—		—Production—		Total Disappearance	
	Soft Red Winter	All Wheat	Soft Red Winter	All Wheat	Soft Red Winter	All Wheat
July 1, 1961*	12	1,529	195	1,368	135	606
July 1, 1960	11	1,313	163	1,128	132	601
July 1, 1959	21	1,295	195	1,462	137	609
July 1, 1958	6	881	159	951	133	584
July 1, 1957	10	909	187	1,004	134	583

*Estimated. Source: "The Wheat Situation—October, 1960."

TABLE III

PRODUCTION OF SOFT RED WINTER AND ALL WHEAT AND PERCENTAGE RELATIONSHIP

	Soft Red Winter	All Wheat	Red Winter as % of All Wheat
1960	105,000,000	1,368,000,000	14.3%
1959	163,000,000	1,128,000,000	14.4%
1958	105,000,000	1,462,000,000	13.3%
1957	159,000,000	951,000,000	16.7%
1956	187,000,000	1,004,000,000	18.6%
1955	173,000,000	935,000,000	18.5%
1954	203,000,000	985,000,000	20.6%
1953	243,000,000	1,169,000,000	20.8%

Government Data

Using latest government data on production and applying percentage figures for Statistical Bulletin No. 272, Agricultural Research Service, entitled "Distribution of Varieties and Classes of Wheat in the U.S. in 1959," the National Soft Wheat Millers Assn. has derived a detailed, highly informative breakdown of 1960 soft red winter wheat production.

It shows that Ohio, North Carolina, South Carolina and Maryland devote 100% of their wheat acreage to production of soft red; Pennsylvania gives 99% to it; Indiana and Virginia 98%; Kentucky 94%; Tennessee 92%; Arkansas 91%; Illinois 43% and Missouri 33%.

Other states east of the Mississippi River, with the exception of the New England group and Florida (none of which grows an appreciable amount) have less than one third of their wheat acreage sown to soft red winters.

Millers and merchandisers of soft wheat flour were highly concerned last spring over inroads made on domestic stocks by virtue of foreign demand on the one hand and the possibility of legislation to cut back small farm acreages in the eastern half of the country on the other.

Now they are fearful of new, greatly reduced acreage allotments "across the board." In short, they have reason to feel, along with others vitally concerned, that the new administration's zeal to reduce the current, burdensome wheat surplus might do irreparable damage to the soft wheat milling and grain industries, and to the very substantial group of farmers who grow this type of wheat.

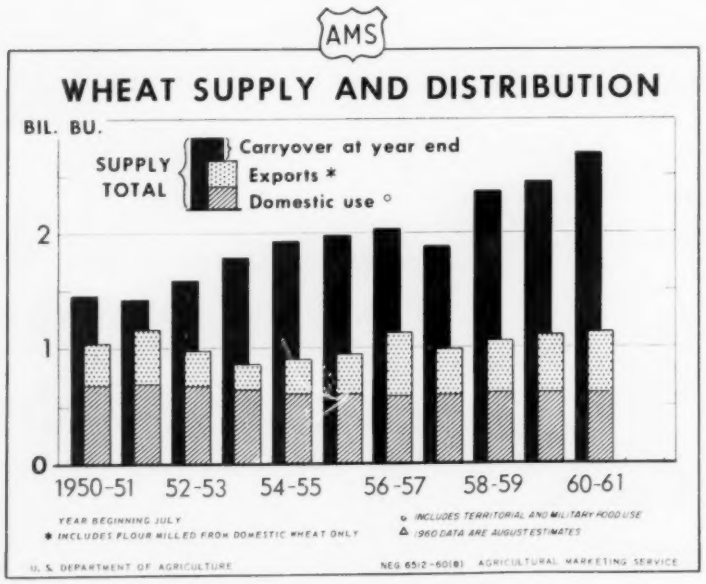
Incoming Secretary

If Mr. Freeman has as much "drag" with the new chief executive as did his predecessor with Mr. Eisenhower, it's possible a disastrous slash might be taken at the traditional soft red winter wheat acreage.

And should he throw his weight behind such a measure, he may find that history's all wrong and the Civil War is still on. It could even be that in such a case the ex-governor from Minnesota may question his own sanity about having said "Yes" when tapped for the hottest spot in the cabinet.

The uproar from the soft red winter wheat states, if injury is perpetuated, may be of such proportions that Mr. Freeman will wish himself back in Minneapolis or St. Paul having a quiet lunch with some of his Scandinavian legislators, possibly enjoying a peaceful smorgasbord at the Odin Club. (That's where for many years, as old timers will readily affirm, one could participate in a smorgasbord to end all smorgasbords, along with a red hot argument championing Christopher Columbus as the discoverer of America—when everyone in Minnesota knows, by "Yumpin' Yimminy," it was discovered by Leif Ericson! «

TABLE I



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●

So it is with association officials who have a product to offer—their meetings with all the advantages of technical know-how they provide in return for a seat on a hard chair. The rising attendance figures at district meetings of the Association of Operative Millers in 1960 were, in some respects, a direct result of the skilful promotional, packaging and selling job on the part of the elected officers. From many of the 14 districts making up AOM in the U.S. and Canada come reports of cracked attendance records, some of them topping the century mark.

●

Instances of better promotion and better selling could be cited from many districts. One will have to suffice. We will use the Central District—No. 2—based in Kansas City, as an example.

●

Last year's district chairman was the popular **Dick Danbury** of the Commander Larabee Milling Co. He was determined to boost attendance. His first task was to provide the best in technical programs to help his fellow-millers; his second to furnish an attractive supplementary program. Shyly, he told his fellow members that he had written, or could write, a "millerdrama" entitled "The Philandering Knight." That's how it began.

●

During the summer, the members went to work determined to make their September meeting a "hit." They did. Though Mr. Danbury was listed on the program as composer, producer, director, casting manager and scene shifter, the production appears to have gotten away from him.

●

That was not unexpected. When you get such people as **Harry Taylor** of Rodney Milling Co., and a distinguished national executive committeeman letting his hair down, metaphorically speaking, in the cause of good attendance, to say nothing of International's **Ed Hite** and **Steve Mooney,** and quadrupled with the undoubted talents of McGrinding's **"Doc" Bowen,** the stage is set.

Bringing Millers To Meetings

The always dignified **Warren Keller** of Sterwin Chemicals, Inc., "wowed" the audience, while Entoleter's **George Smutny** in Bermuda shorts was as lively as a bushel basket of weevilly wheat. To all this talent add a sprinkling of the ladies of District 2—**Ann Bowen, Pamela Bowen, Mildred Taylor, Marge Smutny**—who subsequently exhibited her prowess as a jitterbug dancer at the district's December Christmas party—and **Helen Danbury;** mix in the talents of impresarios **Donald S. Eber** and **Thane Olsby** of Industrial Fumigant and the result was success.

●

But there was more attendance-boosting material. Wallace & Tiernan's well-known-man-about-Kansas, **Roger Pratt,** mastered the ceremonies and a barber shop quartet, made up of Mr. Olsby, **Houstan Boyd** of Rodney, **Gene Holm** of Victor Chemical and **Walter Cochren** of Wallace & Tiernan, sang with aplomb and talent.

●

The irrepressible **Jim Doty** of Doty Laboratories partnered **Lyle P. Carmony** of Sterwin as Zeb and Jeb with some of their material, an observer informed us, drawn from THE MILLER's Grist of Grins. (Special Memo—at least three of the jokes have been recognized as coming from that department and we bow to the compliment.)

●

The names of two performers have so far gone unmentioned—**Jack** and **Lisa Miller.** Jack, with Ismert-Hincke Milling Co. at Topeka, and his wife attended every weekly rehearsal and clocked up over 1,000 miles of travel in the process, a commendable effort.

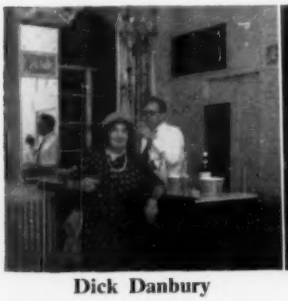
●

The award of AOM's distinguished service diploma to Mr. Danbury at the equally successful December meeting was never more deserved, not only for his efforts to "attract" members, but for the work he did in insuring that their technical knowledge was increased by the excellence of the programs.

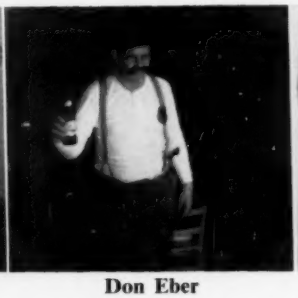
S. J. Mooney

●

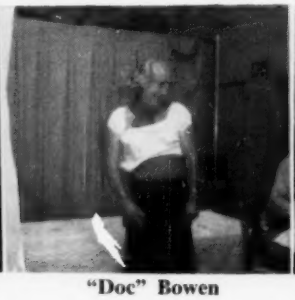
Steve Mooney succeeds him as district chairman and **Jack Miller** becomes vice chairman, with **George Smutny** and **Harry Taylor** continuing as secretary-treasurer and national executive committeeman, respectively. «



Dick Danbury



Don Eber



"Doc" Bowen

Ed Hite, George Smutny

SUCCESSFUL DISTRICT groups result from enthusiastic members and they in turn spawn good officers and leaders. Here is a typical group of three officers conferring with, at the extreme left, Ernest Schroeder, Great Western Manufacturing Co. At the table is George L. Smutny, Entoleter, Inc., secretary-treasurer of District 2. Immediately behind him is Harry Taylor, Rodney Milling Co., national executive committee man, and on the right, Dick Danbury, Commander Larabee Milling Co., who had just completed a successful year as district chairman.

THE DISTAFF SIDE plays an important part in building interest in district affairs. Here are some of the ladies, with their husbandly business interest following their names, preparing to entertain the men. Seated at left is Mrs. Robert Chenoweth (Chenoweth Brush Co.), and on the right Mrs. Donald S. Eber, wife of AOM's executive vice president. Standing, left to right, are Mrs. Harry Taylor (Rodney Milling Co.), Mrs. Thane Olsby (Industrial Fumigant Co.), Mrs. Warren Keller (Sterwin Chemicals, Inc.), and Mrs. George Smutny (Entoleter, Inc.).

FESTIVE BACKGROUND was chosen for Thane Olsby, Industrial Fumigant Co., another allied trade stalwart, Mrs. Beth McLurg, recently appointed secretary to Don Eber in the AOM head office, Mrs. Miller and her husband Jack Miller, who succeeded Mr. Spohn at Ismert-Hincke's Topeka mill.

AOM
Picture Gallery
at
Kansas City

ALLIED TRADES OFFICER Walter Cochren, Wallace & Tiernan, watches as Mrs. Jack Spohn examines a gift. Looking on is Mr. Spohn, retired from Ismert-Hincke Milling Co., but still active in business as a representative for Nor-Vell, Inc.

SERIOUS DISCUSSION is the order of the day at all meetings. Here George Tesarek, Quaker Oats Co., talks to Frank Shidler, SMICO, about the newly formed firm of Smico-Morros which brings Mexican machinery to the attention of U.S. millers.

Smico Arranges with Mexico City Firm to Market Milling Machinery

Under the trade name of Smico-Morros, a complete line of flour milling machinery will be marketed in the U.S. and abroad, it has been announced by Frank Shidler, president of Smico, Inc., Oklahoma City mill machinery manufacturer, and Ot Zimmerman, president of Smico Sales, Inc., Minneapolis. Mr. Shidler said that arrangements had been completed with the firm of Morros S/A., Mexico City, to produce a complete line of milling machinery for the Smico-Morros brand, built to the standards and needs of the U.S. market. This equipment will be augmented by additional items produced by Smico in the U.S.

Ot Zimmerman

The Morros firm, Mr. Shidler said, has been established in Mexico City for 24 years and has built over 60 new plants and milling units in Mexico and South America. It is the outgrowth of a Spanish firm of the same name which has been manufacturing milling machinery at Barcelona for many years.

The machinery produced by the Morros firm is of the most modern and advanced design and engineering, Mr. Shidler said, and the company has produced some outstanding plants in Latin America and elsewhere. The Mexican firm has been building its machinery on American measurements and standards and the equipment offered U.S. mills will have all of the features desired in this country, he added.

Line Produced

The Smico-Morros line will include fully automatic and semiautomatic roller mills, all steel sifters, streamlined purifiers, finishers, wheat washers, scourers, brush machines, separators, and aspirators, as well as multiple pneumatic systems designed for wheat house cleaning systems and milling flows. Other items in the Smico-Morros line will be percentage feeders, aspirator heads, prefabricated spouting and transitions, rotary air locks, pneumatic feeders, fans, moisture applicators for wheat, grinders and mixers.

Mr. Shidler said that the new arrangement was the outgrowth of a need and demand from Smico customers who desired a complete line of flour milling equipment, consolidating U.S. and European designs. Last March, Mr. Shidler and Mr. Zimmerman made a three-month European trip visiting flour mills and machinery manufacturers there to survey the possibility of selecting an experienced firm to furnish Smico with machinery, pneumatics and other equipment suitable for the American market.

This visit led to a contact with the Morros firm in Barcelona, headed by Moises Morros, where it was found that an affiliated company in Mexico headed by a brother, Abel Morros, was producing equipment made to American specifications. A visit to the Mexican firm, Mr. Shidler said, revealed a well-established, highly successful company with over 400 employees, and soon to move into a new plant. The location of this firm within trucking distance of the midwestern U.S. offered substantial advantages, Mr. Shidler said. «

IN HIS OFFICE, Frank Shidler, president of Smico, Inc., shows where much of his firm's plans originate and are carried out. Note the clocks for various world time zones on the wall behind Mr. Shidler.

Wayne Forcade New Exchange President At Kansas City

Wayne A. Forcade, president, Mid-Continent Grain Co., has been elected president of the Kansas City Board of Trade. He was elected without opposition and succeeds Dewey E. Walter, the Pillsbury Co.

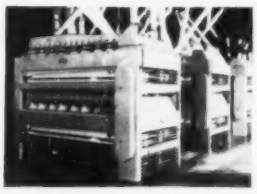
George P. Scoular, Scoular-Bishop Grain Co., was elected first vice president, defeating Hearne Christopher, B. C. Christopher & Co. John J. Blowers, Archer-Daniels-Midland Co., becomes second vice president, over the other candidate, William E. Root, Topeka Terminal Elevators.

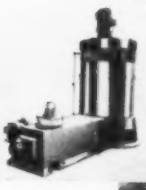
Six directors were elected: Paul D. Bartlett, Jr., Bartlett and Co.; Aaron M. Davis, Davis-Hunt Grain Co.; W. W. Fuller, Central States Grain Co., Inc.; R. E. Larson, General Mills, Inc.; Willis C. Theis, Simonds-Shields-Theis Grain Co., and Dewey E. Walter. There are six holdover directors.

Elected to the arbitration committee were: George R. Bicknell, Farmers Union Jobbing Assn.; A. N. Fugett, International Milling Co.; Horace W. Johnston, Simonds-Shields-Theis Grain Co.; Roy E. Lyman, Corn Products Co., and B. C. McCoy, Ralston Purina Co.

Named to the nominating committee were: George A. Kublin, Continental Grain Co., and J. J. Wolcott, Jr., Wolcott & Lincoln, Inc.

Directors elected to the Grain Clearing Co. were: R. P. Harbord, Goffe & Carkener, Inc.; M. D. Harnett, Continental Grain Co.; F. L. Klecan, Francis I. duPont & Co., and F. A. Theis, Simonds-Shields-Theis Grain Co. «





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Death of John H. MacMillan, Jr., Brings H. Terry Morrison to Helm of Cargill

Directors of Cargill, Inc., have elected H. Terry Morrison as chairman of the board. Mr. Morrison formerly was vice chairman, and succeeds the late John H. MacMillan, Jr.

H. Terry Morrison

Action of the board completes a major realignment of executive positions in the 95-year-old farm products firm, stated company officials at Minneapolis.

Mr. Morrison, a native of Virginia and a graduate of Virginia Military Institute, joined Cargill in 1946. He was elected a vice president in 1947 and became head of the firm's administrative division and a director in 1952.

In 1957 Mr. Morrison was elected executive vice president and chief administrative officer, later becoming vice chairman of the board.

The new board chairman served in Europe as an army officer during World War I and again as an Air Force Colonel in World War II, being awarded the Legion of Merit and four commendations. In the interim he was a member of the New York Stock Exchange. He retired from the Air Force in 1953 as a Brigadier General. «

• • •

J. H. MacMillan, Jr., Industry Veteran, Dies

John H. MacMillan, Jr., board chairman and chief operating officer of Cargill, Inc., died in Durham, N.C., following an illness of about a month.

J. H. MacMillan

Mr. MacMillan was a grain industry veteran, having started his business career as a buyer and trader for Cargill Elevator Co. at its Duluth office in 1919. He was elected a director of the firm in 1926.

In mid-November, shortly before his illness, Mr. MacMillan had returned from a month-long business trip to Europe.

Originally from Fort Worth, Texas, Mr. MacMillan was a resident of Minneapolis since 1903. He attended Phillips Academy, Andover, Mass., and Yale University, where he was graduated with a bachelor of arts degree in 1917.

When the Cargill Elevator Co. became Cargill, Inc., in 1932, he became vice president and general manager, and in 1936 was elected president, succeeding his father, John H. MacMillan, Sr. He became board chairman in 1957, succeeding John G. Peterson.

Surviving are his wife, Marion; a daughter, Mrs. Hubert F. Sontheim, Geneva, Switzerland; two sons, John H. MacMillan, III, Minneapolis area, and William Duncan MacMillan, Geneva, Switzerland, and his mother, Mrs. John H. MacMillan, Sr., Wayzata, Minn. «

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A Milling Technology Feature

Transient Dynamics in Free Swinging Sifters

Oscillation Can Be Studied; a Suitable Model, Carefully Constructed and Diligently Observed, Will Tell a Good Deal About This Irregular Activity

By HOWARD E. HALL

"Walking" and "bucking," these are terms suited to bring a good milling superintendent up on his toes, especially if they refer to his sifters.

Most manufacturers have rectified the inherent tendency of free swinging sifters to rotate in a violent and irregular manner — but even today there are some sifters in use which do not rotate satisfactorily.

These "walking" and "bucking" phenomena, the wild behavior of certain free swinging sifters which this paper will investigate, are transient because they disappear as time passes. Therefore, this analysis of the dynamics is limited to free swinging sifters.

Figure I shows a photograph of a model sifter constructed to observe the various transient motions to which a sifter is susceptible. The observations were qualitative in nature because the model was not instrumented to measure oscillations.

The model represents a two-section sifter, and the scale is approximately 1 in. equals 1 ft. The boxes are solid wood, 6 in. by 3 in. by 3 in., joined at top and bottom with ⅛ in. plywood. All joints are glued. Two maple strips are used to anchor the four steel wire suspension cables.

Bearings, drive shafting and weights are fabricated from pieces of brass tubing, brass rods and copper wire. Although the drive train deviates considerably from standard practice, it is quite simple and functional. For these reasons, the drive train should be of some interest.

The motor is mounted on the floor above the sifter, and power is transmitted to the sifter by shafting and universal joints. No belts or throw blocks are used, nor are they necessary with this layout. The motor is a small D-C gearhead motor with an 18:1 reduction, and it is provided with speed control by using a Syntron rheostat. Electrical energy is obtained from a six-volt dry cell. Under normal conditions of operation, the sifter orbits in a perfect circle of 0.09 in. in diameter.

Vibrating Machine

The dynamics of sifter oscillations can be handled the best by considering the sifter as a low frequency vibrating machine. Any unusual sifter motions can be credited to two types of vibration: They are the damped free vibration and the forced vibration.

Damped free vibrations can be demonstrated by using the sifter model. If one pushes the sifter when it is not running, it will swing back and forth in steadily decreasing arcs until it finally stops. It is noted that the sifter swings at a constant frequency. This frequency is called the natural circular frequency of the sifter. The natural circular frequency of a sifter can be computed by assuming the sifter acts as a pendulum.

The reason for the decreasing amplitude of the oscillations is that air resistance damps the oscillation. If there were no damping, a free vibration would never stop. The suspension cables also damp the oscillation to a small degree, but the damping of the model is almost entirely due to air resistance.

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FIG. 1
Sifter Model

train. Figures II and III show undamped and damped free vibrations. In addition to damped free vibrations, the sifter is subjected to forced vibrations.

A forced vibration is the result of a cyclic force being applied to a body. In the case of sifters, the normal shaking of the sifter is classed as a forced vibration. The cyclic force causing the vibration is generated by the rotating weights.

The magnitude of the force is a function of the mass of the weight; its lever arm to the center of rotation;

Sifter oscillation, if it is to be thoroughly understood, requires exploration of several areas of engineering and dynamics—particularly with regard to superimposed frequencies, resonance, damping and weight shifting. The author is with General Mills, Inc. His prize-winning paper was entered in the District 9 Association of Operative Millers' essay contest, and read at a recent meeting in Seattle.

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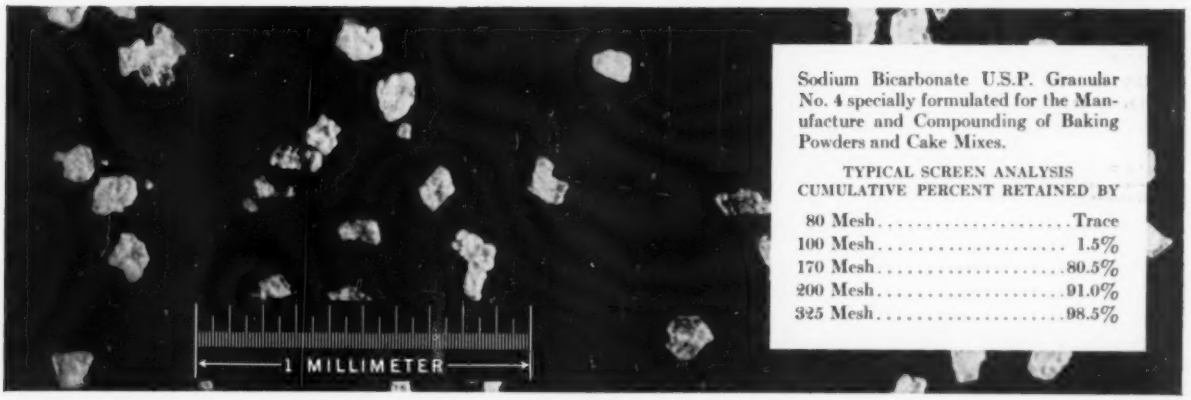

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Sifter Motion Studied (Continued)

and the square of the speed of rotation. The frequency of vibration of the sifter is always equal to the speed of the weights.

Basic Concept

Now that a basic concept of vibrations has been established, the transient phenomena can be examined.

Walking is an excellent case of superimposed vibrations. A walking sifter is one that is oscillating at both its natural circular frequency and also at the much faster exciting frequency at the same time. The natural circular frequency of a sifter with reeds 12 ft. long is 15.6 cycles min. The exciting frequency is usually 180 cycles min. A walking sifter with reeds 12 ft. long will swing at a free vibration of 15.6 cycles min., and in addition, a forced vibration of 180 cycles min. will be superimposed.

The throw diagrams for the two separate vibrations and the combined vibration are sketched in figure IV.

The slow free vibration initially has a large amplitude, but damping eventually cancels the transient free vibration, allowing the sifter to vibrate in a smooth circular orbit. The model demonstrates walking and damping very nicely. If the sifter is in good condition, walking will disappear rapidly. A sifter which walks occasionally is being affected by a random outside force, such as a shifting mill structure.

A free swinging sifter has a tendency to oscillate wildly under starting conditions. The proper name for this starting phenomena is resonance.

Resonance occurs when the frequency of the forced vibration equals the natural circular frequency. Earlier it was stated that the natural circular frequency of a sifter with reeds 12 ft. long is about 15.6 cycles min. During the period when the mill is being brought up to speed, the weights will naturally rotate at 15.6 rpm. for a short period of time. The sifter will swing wildly on resonate during this time.

The reason why the sifter swings wildly is quite simple. By pushing the model sifter, one can make it swing back and forth. If one continues to push the sifter in phase with the vibration and at the same frequency, the sifter will soon be swinging wildly. This actually happens at resonance, but the rotating weights do the pushing. At speeds above and below the natural circular frequency, the sifter will oscillate smoothly.

Figure V is a plot of amplitude of the sifter vibration versus the speed of rotation of the sifter weights. The ordinate of the graph is the relative amplitude of the sifter vibration. The relative value is one at minimum speed. The abscissa is the relative speed. The value one is the resonance frequency.

The three curves illustrate the effect of damping upon the amplitude of the resonant vibration. It is noted that the amplitude of vibration, or the sifter throw, if you like—"is" a function of sifter speed. The throw decreases with speed until the throw becomes zero at a very high speed. When there is no damping, the amplitude becomes infinitely large at resonance.

Slight damping decreases the amplitude, and a large damping reduces the resonance amplitude to a very small amount. In all cases, the amplitude of vibration above resonant speed is less than the amplitude at speeds below resonance.

During Starting

One more interesting phenomena occurs during starting. It is almost impossible to observe, but must be considered in a study of sifter vibrations.

Consider a rotating sifter. Let us

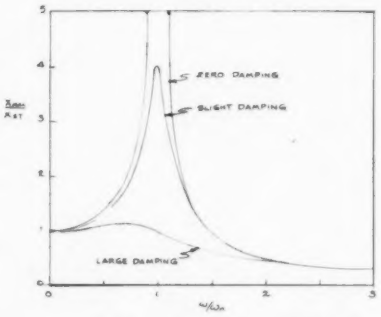


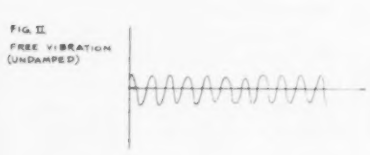
FIG V VIBRATIONS - AMPLITUDE VS FREQUENCY AT FREQUENCIES NEAR RESONANCE

freeze its motion and then observe what is happening by looking down at the top of the sifter.

First draw a line connecting the center of rotation of the sifter with the center of the sifter. Then draw a line connecting the center of rotation of the sifter with the center of gravity of the sifter weight. It will be noted that an angle, denoted by the letter ϕ, exists between the two lines. Figure VI shows this angle.

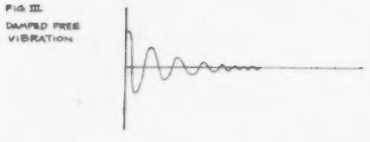
The angle measures the amount the sifter vibration is out of phase with the weights. In effect, the damping action on the sifter causes the sifter to lag behind the weight. The phase angle is not constant but varies with sifter speed. The rate at which the phase angle varies is also a function of the degree of damping. Figure VII is a series of curves showing the phase shift. The abscissa again is the relative speed as in Figure V. The ordinate is the phase angle. As it can be seen, the phase angle varies from 0° to 180°. In the case of zero damping, the phase shift occurs instantly at resonance frequency.

The larger the damping, the flatter



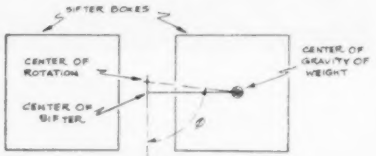
THROW DIAGRAM
DAMPED FREE VIBRATION

THROW DIAGRAM
FORCED VIBRATION



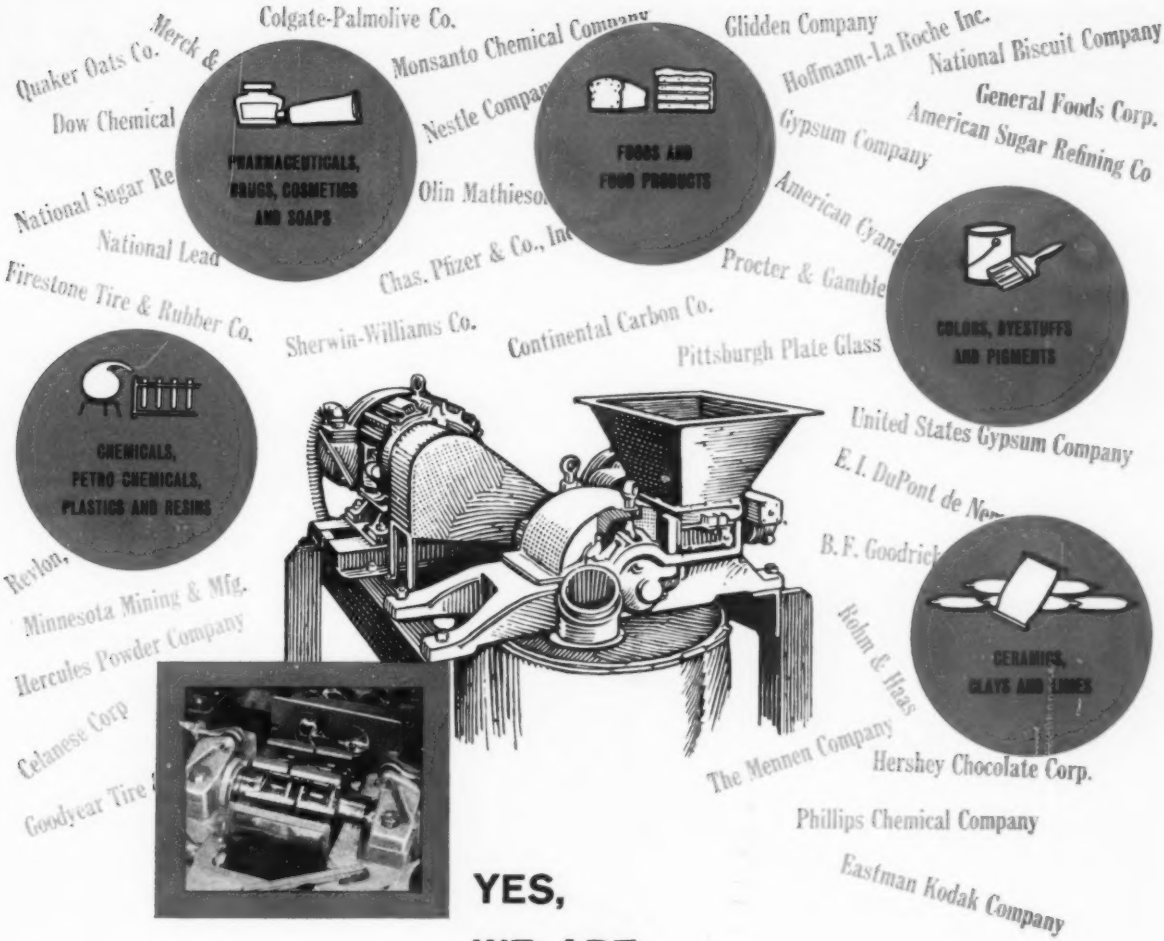
THROW DIAGRAM
COMBINED VIBRATIONS
(WALKING)

FIG IV
THROW DIAGRAM FOR
A
WALKING SIFTER



ϕ = PHASE ANGLE BETWEEN WEIGHT AND SIFTER
ϕ IS LESS THAN 1

FIG VI
TOP VIEW OF SIFTER DURING OPERATION
SHOWING SIFTER LAG



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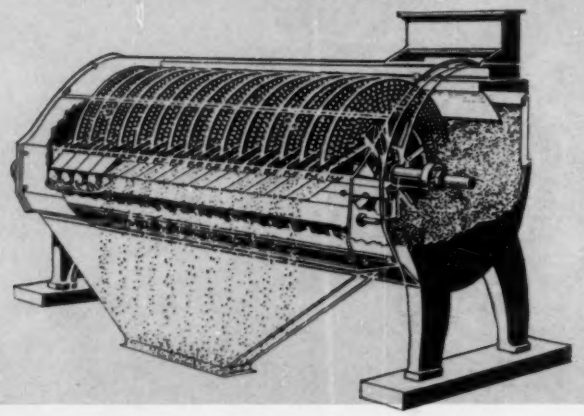

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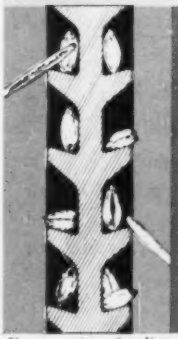
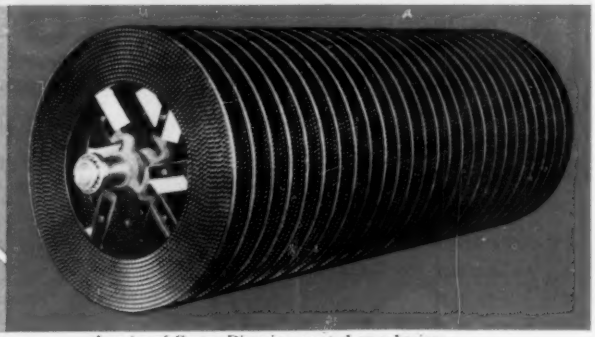


Cross-section of a disc, showing how longer material is rejected.



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the curve. One thing that should be noted is that the phase angle is 90° at resonance. By the way, the amplitude of vibration at a given speed is also a function of ϕ.

To Correct Resonance

Resonance is corrected by utilizing a system of movable weights and springs. The sifter weights are held in such a position that there is no exciting force generated by the rotating

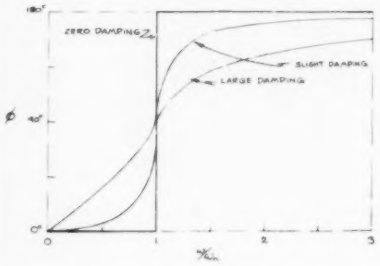

FIG VII
VIBRATIONS - PHASE SHIFT VS. FREQUENCY AT FREQUENCIES NEAR RESONANCE

weights until the weights are rotating at a speed much higher than the natural circular frequency of the sifter. The weights will then pop out and a shaking force is generated by the weights.

This system works very nicely until the springs fatigue, and then the weights pop out at speeds below the natural circular frequency. The sifter will then resonate. If a sifter which at one time could be started smoothly begins to resonate, the springs that control the weights should be replaced.

In closing, I would like to say that I have endeavored to present the results of a cursory study of sifter oscillations. We have explored superimposed frequencies, resonance, damping and weight phase shifting.

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Breadmaking Discussed By Pioneer Section, AACC, in Wichita

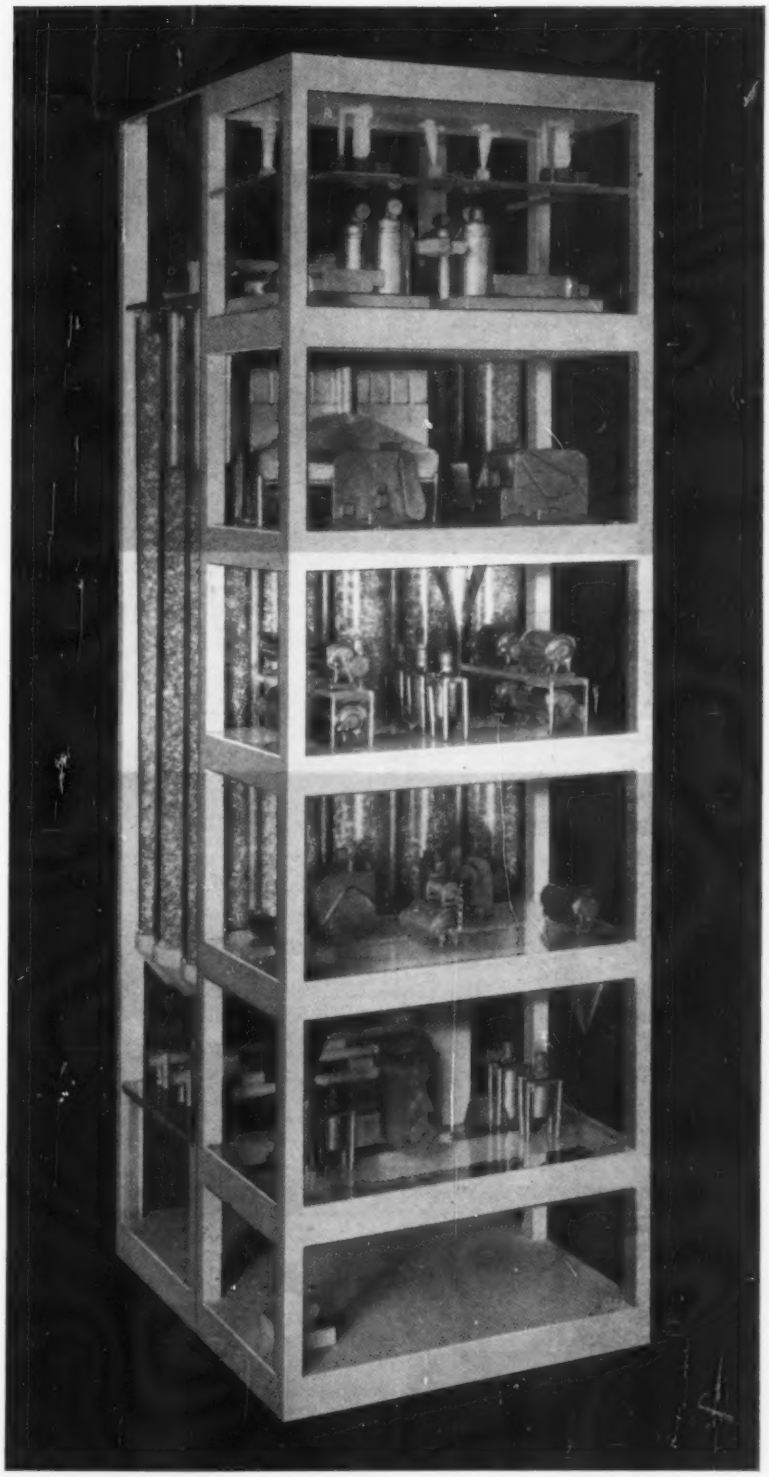
Bread-making methods were given considerable attention at the December meeting of the Pioneer Section, American Association of Cereal Chemists, in Wichita. The topic was given the formal title "New Breadmaking Methods Employing the Principle of Vertical Mixing."

Lawrence F. Marnett, the C. J. Patterson Co., Kansas City, titled his part of the program "Full-Flavor Process." He discussed use of the process on Patterson plants, utilizing a large, vertical, high-speed mixer. This, he explained, works on the same principle as laboratory size mixers, but using bowls each of which holds several hundred pounds of dough. A sequence of bowls is charged with dough-making ingredients and placed successively under the mixer. A mechanical dumper empties the bowls of finished dough into the dividing apparatus, he explained.

Mel Huber, Interstate Bakeries Corp., discussed the "IBC Denver Process" and "TendrKurl Molding." The dough-making process, he explained, uses a wet mixture during development of the doughs, eliminating use of softening agents. The bread which results has a better flavor and increased public demand, claimed Mr. Huber.

The initial day of the two-day session was an informal gathering for members and their wives. The final day began with a short business session conducted by Eugene V. Holm, Victor Chemical Works, Kansas City. Mr. Holm announced the resignation of J. B. Morgenson, Ismert-Hincke Milling Co., Topeka, as secretary-treasurer. Wayne V. Parker, General Mills, Inc., Wichita, was appointed to take over as secretary-treasurer for the remainder of Mr. Morgenson's term.

Dr. Luther Lyon, acting head of the chemistry department, Wichita University, in an informal discussion entitled "A Little History and a Little Atomic Energy," reviewed historical development of atomic energy and described present goals in perfecting processes to utilize products of atomic fission. Dr. Lyon has accepted a position with the University of California and will be working in the field of atomic energy at Los Alamos, N.M. «



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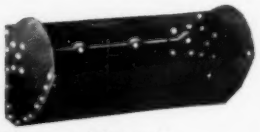

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Manhattan Meeting

Districts 1 and 2, Association of Operative Millers, will meet jointly in Manhattan, Kansas, April 7 and 8. Approximately 125 to 150 members and their wives are expected to attend. A program for the technical meetings is in process of preparation and will be announced, according to Eugene P. Farrell, associate professor, Kansas State University. «

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Plastic Grain Storage System Being Tested

A new system which the manufacturer claims "may revolutionize grain storage and help protect U.S. grain from radioactivity in time of nuclear war" is being field tested at the Rice-Powell grain elevators in the Lake Calumet area of Chicago.

Developed by the Dunbar Kapple division of DK Manufacturing Co., Batavia, Ill., the system uses huge plastic sausages for flat storage, eliminating the need for costly structures. Dunbar Kapple's pneumatic grain handling machine, the Vac-U-Vator, blows the grain into Koroseal vinyl storage sausages, which have capacities ranging from 5,000 to 50,000 bu.

When filled, air flow into the same machine is reversed, and enough air is removed from the grain to create a partial vacuum, reducing the life-fostering oxygen for insects, molds and other destructive elements. The vinyl storage sausages, developed by B. F. Goodrich, reportedly are impervious to weather changes and attacks by rodents.

Storage of Bags

The bags can be stored underground or above. The 25,000 bu. sausage under test at the Rice-Powell elevators is 100 ft. in length and circumference and weighs 600 lb. When filled with air at a water pressure of 2 in., the added air gives it a weight of 15,000 lb. This, it is claimed, provides strength to withstand winds of great force.

"The system should help American farmers by enabling them to store grain for an investment in storage facilities of about 5¢ bu., compared to current building costs of approximately 30¢ bu.," states Daniel F. Rice.

For storage above ground, the only preparation needed is smoothing of the earth or evening of it with a few inches of sand. Other systems of this type usually have required concrete bases and metal frameworks to support the plastic bags, adding substantially to the cost of storage.

Only a limited number of the installations are to be sold now to elevator operators and farmers, with the understanding that no warranties will be given until field tests are satisfactorily completed, officials said. «

AT THE LEFT can be seen the big plastic, sausage-like grain storage unit being tested at the Rice-Powell elevators. At right the pneumatic grain handling machine is disconnected. The bag has been deflated by reversing air flow in the Vac-U-Vator, creating a partial vacuum and eliminating enough oxygen from the grain to reduce the life-fostering element for insects, molds and other destructive factors.

Crop Quality Council, Representatives Of Milling, Research, Discuss Wheat

Wheat quality from the experimental laboratory on through the various processes of growth, milling and baking were covered by some 70 representatives of various interested groups who met recently with the Crop Quality Council in Minneapolis.

Present were key people from agricultural experiment stations in the Upper Midwest, the U.S. Department of Agriculture, the Canada Department of Agriculture, and flour milling, stated Donald G. Fletcher, executive secretary of the council.

Dr. Betty Sullivan, director of research, Russell Miller-King Midas Mills, reviewed the 1960 quality of spring wheat, durum and winter wheat.

Max Hager, Montana Flour Mills Co., was among those who spoke on increased winter wheat acreage in Montana and South Dakota. Summaries of baking results were presented by E. J. Stone, International Milling Co.; R. E. McCormick, Bay State Milling Co.; W. L. Rainey, Commander Larabee Milling Co., and Grant Astleford, Russell Miller-King Midas. Arlin B. Ward, the Pillsbury Co., reported on results of studies on the milling characteristics of potential new wheats.

P. Norman Ness, International Milling Co., and a director of the Crop Quality Council, stressed need for high quality wheat varieties by producers and processors of the wheat crop. «

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Studies of Size Classification Indices

Part I: The Efficiency of Size Classification

By REZSOE GRACZA

INTRODUCTION

INDUSTRIAL procedures are in constant development, which occasionally call for review or further development of their measuring methods, especially of their data evaluation systems. The industries handling particulate materials, especially powders, are primarily concerned with the mode of measurement of particle size distribution, efficiency of size classification step and determination of the critical particle size at which size graders operate.

The problem of measuring particle size, or rather the particle size distribution of a powder, has been covered at length by many workers in the milling industry and other fields and can be conveniently reviewed from the bibliography of Work et al (9).

However, few of the offered particle size measuring methods are applicable to a large quantity of samples which would be necessary to analyze for effective research, development and process control purposes. Moreover, discrepancies exist in the interpretations of particle size as measured by different methods, mainly by virtue of methodology differences and differences of expression of the size value such as maximum linear measurement, mean diameter, Stokes effective diameter or the various equivalent sizes. Under such circumstances, a skilled investigator approaches with caution a critical comparison of size data of two different methods unless a correlation between the two methods has been established for the materials.

In the past, the art of handling powders gave less attention to the problems of "classification efficiency" and "critical particle size." The recent development of size classifiers, especially air classifiers, made necessary the review and further development of these two problems. Certain size classification results (5) in terms of compositional product characteristics indicated that different classifiers operate with different efficiency at about the same critical particle size. Such observations called attention to the efficiency of the classifier in terms of particle size. It became obvious that delicate comparison of different classifiers using the term of classification efficiency needs to be done at constant critical particle size with other variables also being kept constant.

While a general agreement seems to prevail about the ideal definition of the critical particle size, i.e., the particle size of the feed stock, below which size the particles of the feed stock will be collected in the fine fraction and above which size the particles will be collected in the coarse fraction, for its more specific definition and determination, more approaches of academic and practical character may be proposed. Since proposals for the determination of critical particle size may involve the efficiency of classification, it appeared natural to review first the suggested classification efficiency measures, and thereafter discuss the critical particle size of a size classification procedure.

Classification Efficiency Concepts in Literature

In contrast to the bulk of material available in the literature on size measuring methods, there is little published information on the determination of efficiency of classification. Catlin (2) offers the following definition of classifier efficiency: "Efficiency of any selective apparatus such as an air separator is naturally the ratio existing between the amount of finished material recovered and the amount introduced into the machine in a given interval of time." This definition has a sound basis for interpretation, but at a chosen particle size it involves two figures when the recovery of the "finished material" is considered. Catlin is interested only in the fine material; however, air classifications also involve the coarse fraction. There must, therefore, be one figure for the recovery of the fine fraction and another for the recovery of the coarse fraction, as suggested by the Tyler Co. (8).

Since Catlin's definition is centered around recovery of fine products available in the feed, it could rather be called "the efficiency of fine recovery," or if the coarse material is considered, "the efficiency of coarse recovery."

To eliminate the two figures from the Catlin efficiency concept, Brown et al (1) suggested the product of the fine recovery and coarse recovery figures to define efficiency of classification. The two recovery figures have sound interpretation in terms of desired material classified into the fine

Particle size classification is a prime topic in the flour milling industry, even while some areas of its development still undergo improvement. In this, the first of a two-part article, Mr. Gracza takes up the various systems of determining performance. Known principles and methods of determining the performance of size classification were reviewed by way of preparation. Selected principles such as the Catlin recovery, Newton efficiency, average or over-all efficiency and sharpness concepts were compared using a model system, which illustrates efficiency values as function of particle size of a single size classification step. It is concluded that different efficiency concepts may be useful according to different practical requirements. Mr. Gracza is in cereal and grain research with the Pillsbury Co.

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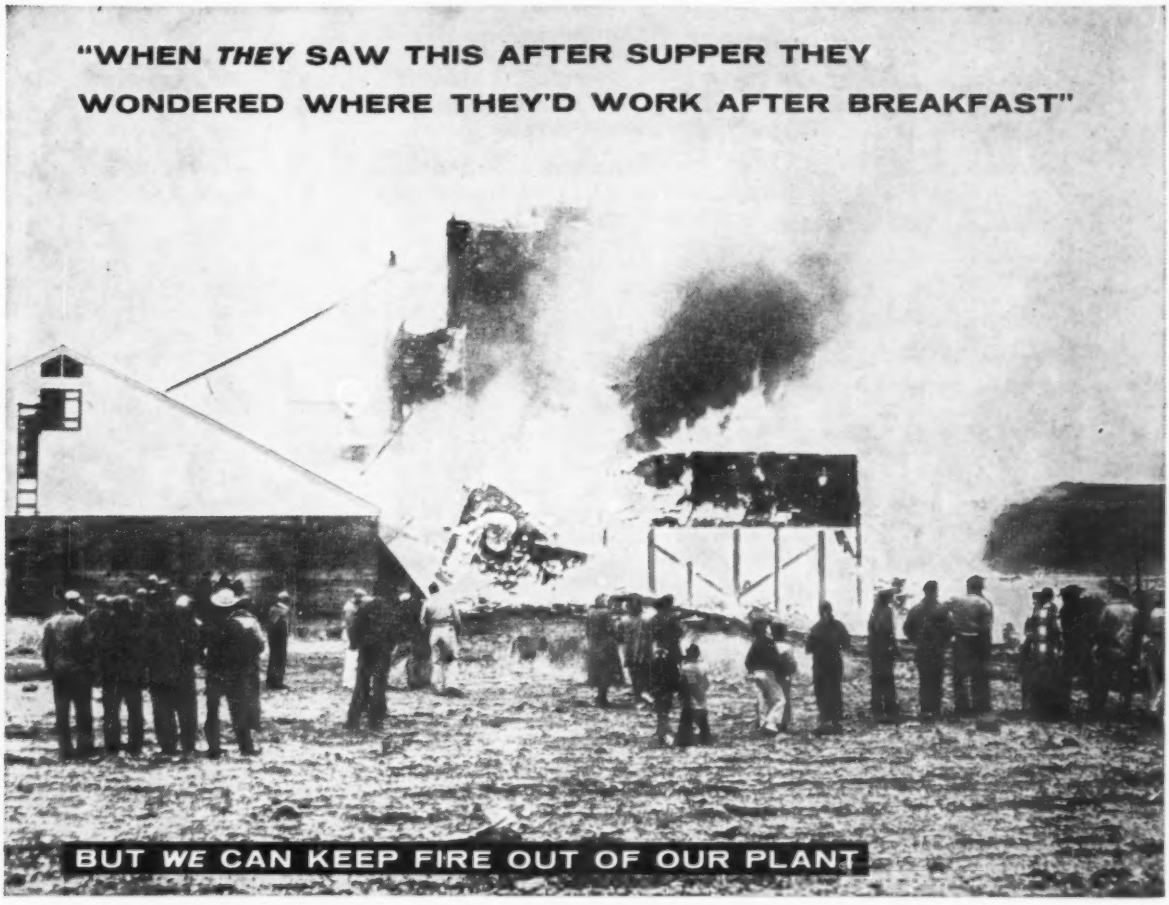

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or coarse fractions out of the feed stock. From the point of view of such interpretation, the product of these figures yields an arbitrary value, however, without becoming necessarily useless for practical purposes.

Newton and Newton (7) say that "—classifier efficiency is defined as the ratio of the weight of classified material in either product to the weight of classifiable material in the feed and is usually expressed in percent." With this definition, and by the derivation of their formulas, the double figure of Catlin's definition was eliminated. This was done, however, at the expense of assuming an imaginary feed, part of which is their "unclassified feed." Their imaginary feed turns out to be different from the actual feed.

Screening Analysis And Evaluation

Kohn (6) presented graphs of screening analysis. He evaluates screen performance by "the length of range which is the size range of imperfect separation" and by "the length of line which measures the quantity of ungraded material." With the size range of imperfect separation, he introduced some qualitative concept of the undersize in the coarse fraction and potentially that of the oversize in the fine fraction. His length of line, proportional to the quantity of ungraded material, is a graphic version of the Catlin recovery concept.

Theoretically, efficiency figures should, and often do, compare actual yields or conditions to ideal yields or conditions in percentages. Following this concept, the perfect classification at an arbitrary particle size, as mentioned before, would produce a fine fraction which has no larger particles than the arbitrary size and a coarse fraction which has no smaller particles than the arbitrary size. This ideal case cannot be met in the practice, and it is known that the fine fraction will have a certain amount of particles larger than the arbitrary size, which may be called "oversize." The coarse fraction will have a certain amount of particles smaller than the arbitrary size. These may be called "undersize." Thus, the definable factors contributing to the imperfection of a separation step, at any arbitrary particle size, are the over-size material left in the fine fraction and the undersize material left in the coarse fraction. Deducting the sum of these factors, expressed as percent of feed material from the 100% feed material, a figure is obtained which shows what percent of the feed material became efficiently classified, i.e., sorted properly into the coarse and fine fractions.

Defined as a ratio as other workers have, one might say: Classification efficiency at an arbitrary particle size is the ratio of weight of properly classified material in both products to the weight of classifiable material (which is here the total feed) expressed in percent of the feed material. The use of such index was suggested by the Tyler Co. (8) and was called "average" or "over-all efficiency."

Catlin and the Newtons evaluated performance of size grading in air classifiers using sieve analysis, such as may be done with standard Tyler screens in the Rotap apparatus. If one wishes to express performance or

GLOSSARY OF SYMBOLS*

x	=	*Arbitrary particle size*
y_p	=	*Percent finer value of the particle size distribution curve of the parent stock at x arbitrary particle size.*
y_c	=	*Percent finer value of the particle size distribution curve of the coarse fraction at x arbitrary particle size.*
y_f	=	*Percent finer value of the particle size distribution curve of the fine fraction at x arbitrary particle size.*
z	=	*Yield of fine fraction expressed as proportion to the parent stock.*
$(1-z)$	=	*Yield of coarse fraction expressed as proportion to the parent stock.*

*Subscripts p, c and f are referring to values of parent, coarse and fine fractions, respectively.

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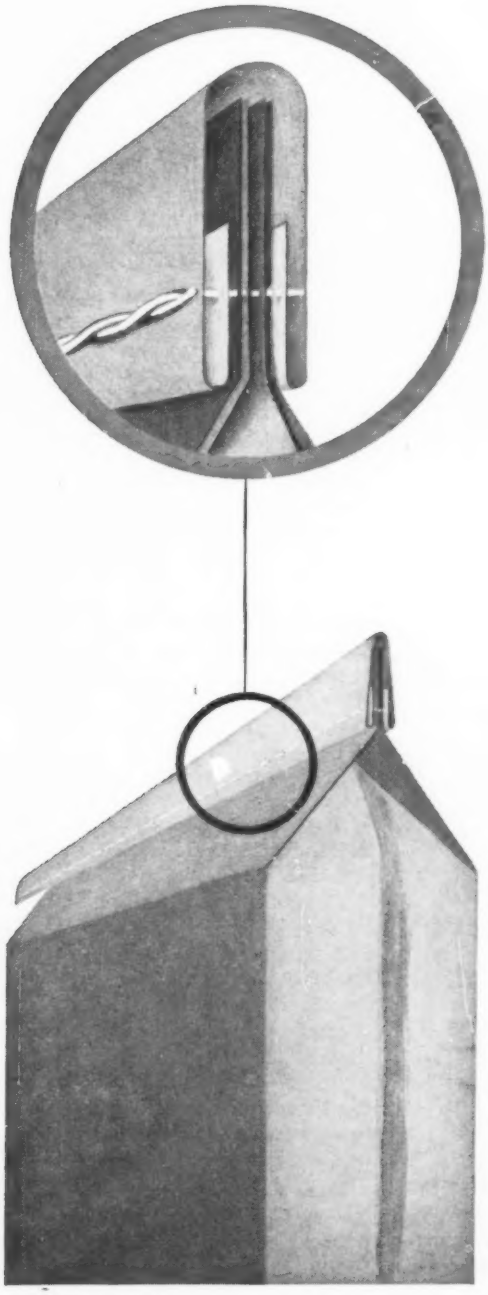

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Data of a Hypothetical Sample Pair of Coarse (60%) and Fine (40%) Fractions and Those of Their Reconstructed Parent (100%) Used for Example in the Text

		x_0	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8
	Particle size: x_i	0	2	4	7	10	13	16	20	25
Coarse Fraction	% finer than x_i size: y_c		0.0	1.0	16.5	38.0	57.0	74.0	91.0	100.0
	% in the Δx_i size range: Δy_c	0.0	1.0	15.5	21.5	19.0	17.0	17.0	9.0	
	Adjusted % in Δx_i size range $(1-z)\ \Delta y_c$	0.0	0.6	9.3	12.9	11.4	10.2	10.2	5.4	
Fine Fraction	% finer than x_i size y_f		7.0	41.0	79.0	96.0	100.0	...	...	...
	% in Δx_i size range: Δy_f	7.0	34.0	38.0	17.0	4.0	...	...	...	
	Adjusted % in Δx_i size range: $z\ \Delta y_f$	2.8	13.6	15.2	6.8	1.6	...	...	...	
Reconstructed Parent	% in Δx_i size range: $\Delta y_p=(1-z)\ \Delta y_c+z\Delta y_f$	2.8	14.2	24.5	19.7	13.0	10.2	10.2	...	5.4
	% finer than x_i size: y_p		2.8	17.0	41.5	61.2	74.2	84.4	94.6	100.0

rather an efficiency measure of a size classification step at a particle size smaller than the smallest sieve opening available, one must resort to the particle size distribution curves of the coarse and fine fractions as measured by a chosen method different from screening analysis.

For the purposes of discussion to follow, it is assumed that the size distribution curves of the feed stock, coarse and fine fractions of a size classification step, are available as measured by any method including screening analysis, and that the interpretation of the term "size" is limited to the definition established by the chosen method.

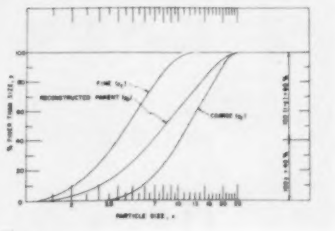
While it is recognized that the ideal expression of the efficiency of a single classification step requires a single parameter, the study of efficiencies in this article followed the historical route, which adopted the investigation of efficiency of a single operation step by presenting it as a function of the particle size (3).

Study of Four Selected Efficiency Concepts

To demonstrate the character of the different efficiency curves, an "arbitrary sample pair" of separation performance is chosen in which the coarse and the fine distribution curves are plotted, so that no material occurs in the coarse fraction under a definite particle size, 3.5 microns, and no material occurs in the fine fraction over another, larger definite particle size, 13 microns. The table (top of page) presents the data of such arbitrary coarse and fine fractions which are plotted in Figure 1.

To avoid confusion in an actual sample pair caused by inaccuracies of particle size determination method, sampling procedure, determination of the percentage of coarse and fine fractions, possible size reduction in classification procedure and other problems, the concept of "reconstructed parent" is introduced to this analysis to replace the feed stock. The necessity of this is obvious when it is considered that, from the particle size distribution curves of fine and coarse fractions and their amounts, a reconstructed distribution curve of a feed stock can be calculated. The distribution curve of the calculated feed stock and that of the measured feed stock in an ideal case should be identical, but in practice, due to the sources of error mentioned, they differ slightly. Four formulas are disclosed in the literature for obtaining from two known distribution curves, the third or missing one, or for calculation of the percentage of fines from the three distribution curves (4).

FIG. 1



CUMULATIVE distribution curves of a hypothetical sample pair of coarse and fine fractions and that of their reconstructed parent stock.

In the subject case, amount of the fine fraction was assumed to be 40%. The distribution curve of the reconstructed parent was obtained by addition of the respective percent in range figures of the coarse and fine fractions multiplied by the fractional yield of each, 0.6 and 0.4, respectively, and summing the values resulting in the percent in range figures of the reconstructed parent stock; further cumulative addition yielded the percent finer than size data. (See table above.)

Having established a point of departure, four efficiency methods will be analyzed separately and an example presented for computation.

Catlin's Efficiency: With the data of the table (top of page) at the 10 micron arbitrary particle size in 100 lb. of reconstituted parent stock, 61.2% is under the 10 micron size and so 61.2 lb. are available to be classified into the fine fraction. From this amount, 96.0 x 0.40 or 38.4 lb. arrived in the fine fraction; and 38.4/61.2=0.627, or 62.7% of the fine stock available in the parent under the 10 micron size has been recovered by classification in the fine fraction. In 100 lb. of reconstructed feed 100—61.2 or 38.8 lb. are over the 10 micron size and available for being classified into the coarse fraction.

From this amount (100.0—38.0) x 0.60 or 37.2 lb. arrived into the coarse fraction; i.e., 37.2/38.8=0.959 or 95.9% of the coarse material avail-

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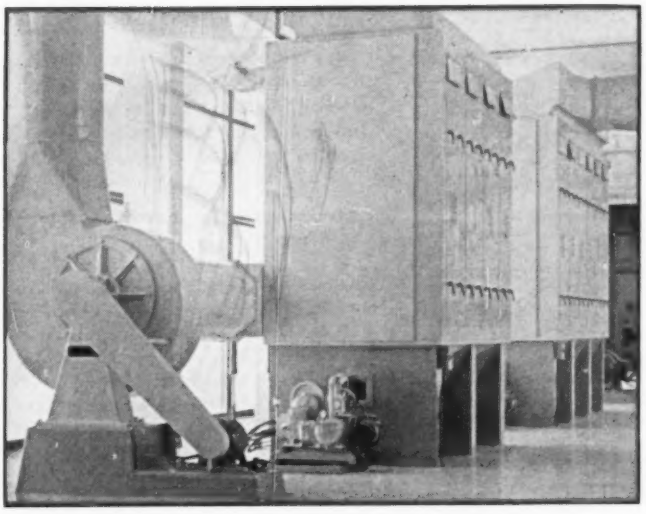

Cross-section of a suction filter sleeve during the cleaning phase.

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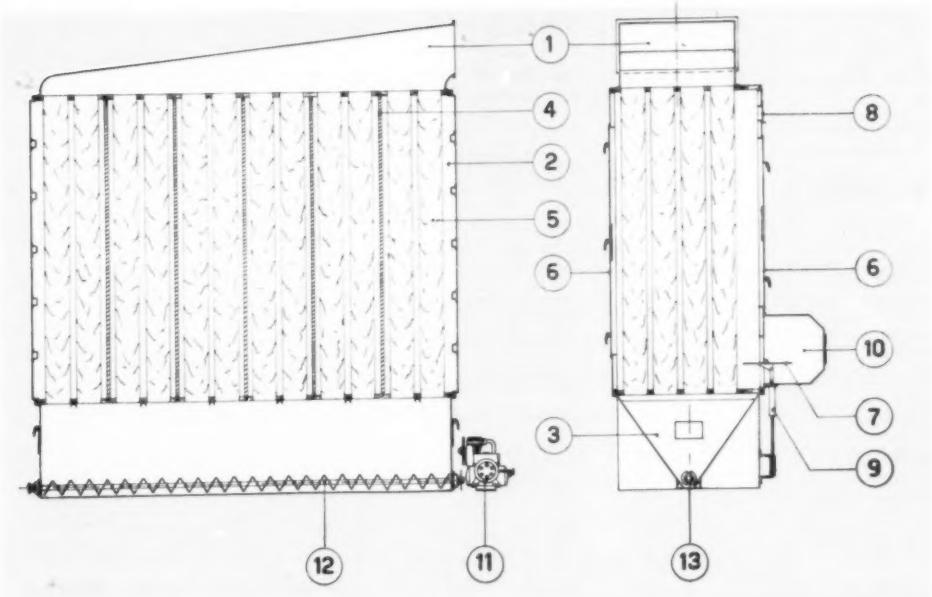

1. Dust-laden air inlet
2. Filter casing
3. Dust collecting hopper
4. Compartment
5. Filter tube
6. Inspection doors
7. Main air valve
8. Cleaning air valve
9. Pneumatic valve
10. Air outlet
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able above the 10 micron size in the reconstructed parent stock has been recovered by classification in the coarse fraction.

Using the mathematical symbols as set forth in the glossary of symbols, the fine recovery index of Catlin at an arbitrary particle size may be expressed as follows:

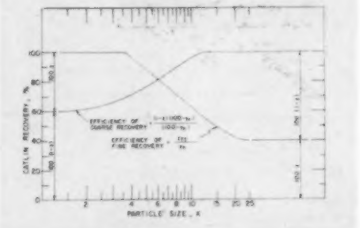
$$\text{Efficiency of fine recovery} = z\,\frac{y_c}{y_p}\,100 \quad \ldots (1)$$

Applying the same definition for indexing efficiency of recovering the coarse material in the coarse fraction:

$$\text{Efficiency of coarse recovery} = \frac{(1-z)\,(100-y_c)}{(100-y_p)}\,100 \quad \ldots (2)$$

Fig. 2 presents the Catlin recovery indices as functions of the particle

FIG. 2



EFFICIENCY of fine recovery (suggested by Catlin) and efficiency of coarse recovery (suggested by the W. S. Tyler Co.) curves of a hypothetical air classification step as a function of particle size.

size. These curves were generated by equations 1 and 2.

Newtons' Efficiency: The efficiency values as suggested by the Newtons were computed by the formula disclosed in their article (7). Fig. 3 presents the Newton efficiency index as a function of particle size when applied to our example. Using the mathematical symbols of the appendix, Newtons' efficiency may be expressed as follows:

$$\text{Newtons' Efficiency} = \frac{\left[\left(1-\frac{Y_p}{100}\right) - \left(1-\frac{Y_f}{100}\right)\right]\left(\frac{Y_p}{100}-\frac{Y_c}{100}\right)}{\left(1-\frac{Y_p}{100}\right)\frac{Y_p}{100}\left[1-\frac{Y_c}{100} - \left(1-\frac{Y_f}{100}\right)\right]}\,100 \quad \ldots (3)$$

Average Efficiency: The efficiency of classification at the arbitrary 10

FIG. 3

EFFICIENCY curve of a hypothetical air classification step as a function of particle size (suggested by the Newtons).

micron particle size may be computed as follows:

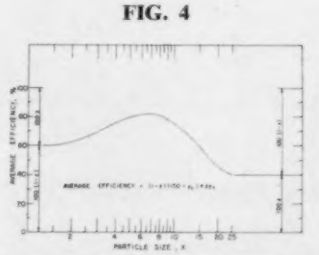
In the coarse fraction 38.0% of the particles are under the 10 micron size and 38.0 x 0.60, or 22.8 lb. of the 100 lb. available feed stock arrived improperly into the coarse fraction as undersize. In the fine fraction 100.0—96.0, or 4.0% of the particles are larger than 10 micron size and 4.0 x 0.40, or 1.6 lb. of the 100 lb. parent stock arrived improperly into the fine fraction as oversize. Altogether, 22.8 + 1.6 = 24.4 lb. of the 100 lb. reconstructed parent stock arrived into the wrong fractions and 100 — 24.4 = 75.6 lb. or 75.6% of the particles arrived into their proper fractions; i.e., 75.6% is the efficiency of classification at 10 micron arbitrary particle size.

Fig. 4 presents the average efficiency index as a function of particle size when applied to our example. Using the mathematical symbols of the appendix, this efficiency index may be expressed as follows:

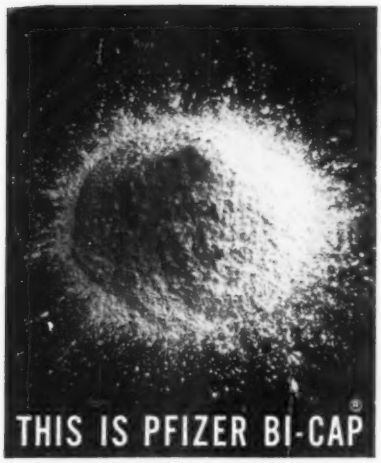
$$\text{Average Efficiency} = (1-z)\,(100-y_c) + z\,y_f \quad \ldots (4)$$

Sharpness: While the former definitions yield performance indices which are dependent on the yields of the fine and coarse fractions, it is possible

FIG. 4



AVERAGE or over-all efficiency curve of a hypothetical air classification step as plotted against particle size (suggested by the W. S. Tyler Co.).



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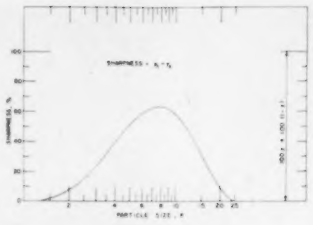
to conceive of an arbitrary measure of efficiency, which is not dependent on the percentage yields of the fine and coarse fraction. Such an index may be defined at an arbitrary particle size using the mathematical symbols of the glossary as follows:

$$\text{Sharpness} = y_f - y_c \quad \ldots \quad (5)$$

i.e., the difference between the ordinates of the percent finer curves of the fine and coarse fractions. Fig. 5 presents the sharpness values as a function of particle size.

This term has a practical advantage not provided by the former indices, since information can be derived from the particle size curves about the classification step without the yield percentage of the fractions. In this case, the classifier is judged only on the qualitative factors of the fractions such as their size distribution. This term merely provides some approximating information about the performance of the classifier.

FIG. 5



SHARPNESS of a hypothetical air classification step as plotted against particle size.

DISCUSSION

The general acceptance of an academically proper efficiency measure based on particle size distribution of a size classification step (not excluding sieving operation) could serve the related industries by establishing or promoting communication in the field. However, the acceptance of such ideal index is hampered by various considerations such as:

(a) Many of the industrial procedures applying size classification do not use the classification efficiency index based on particle size as a primary parameter for judging procedures or machinery since slight changes of such index in most cases do not significantly influence the product.

(b) Few of the up-to-date particle size measuring devices can provide measurements with satisfactory precision to differentiate significantly between different performances.

(c) It is very tedious and costly today to maintain at constant level the numerous other parameters in comparative testing procedures, which affect the efficiency measures based on the particle size distribution of the stocks in a size classification procedure.

Considering these difficulties, it appears natural that specific sectors of the field develop and maintain their own concepts and expressions best suited to their own specific practical problems.

After the review of the art, up until the mentioned difficulties exist, it is recommended that preferred efficiency concepts and/or methods be used which are selected according to specific interest of different practical requirements. «

In Part II of his article on studies of size classification indices, to be published in a forthcoming issue, Mr. Gracza will discuss "The Critical Particle Size."

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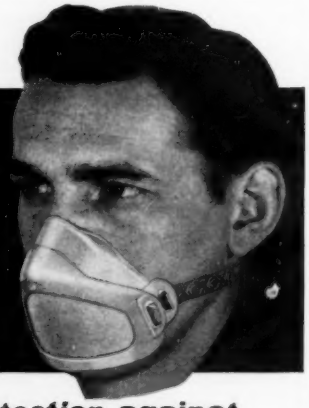
The Improved



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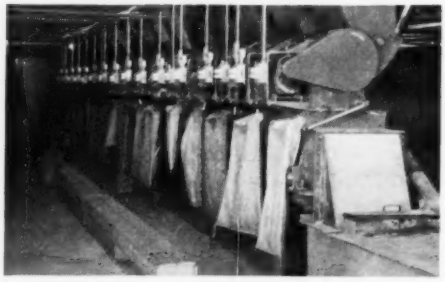
"REDI-WHEAT" is the name for a new wheat food product introduced by the Kansas Wheat Commission, and Mrs. Wilmer F. Ford, Hutchinson, receives credit for naming it. As winner of the contest to name the new product, Mrs. Ford is being presented a check for $50. Making the presentation is W. W. Graber, administrator for the commission. Introduction of the wheat food product is part of a domestic marketing project of Great Plains Wheat, Inc. Mrs. Ford's entry was one of 1,322 from all parts of the U.S., and it was postmarked two days earlier than two identical entries from Colorado contestants, two from Ohio, and one from Michigan. Redi-Wheat will be test marketed in Wichita.

Want accurate blends?



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High accuracy is maintained over entire, wide feeding range.
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Nominations Open For AOAC Award

Nominations are being accepted for the 5th AOAC Harvey W. Wiley Award, a $500 grant to the scientist—or group of scientists — making the most outstanding contributions to development of analytical methods. Announcement of the opening of nominations was made by Dr. C. O. Willits, president, Association of Official Agricultural Chemists.

The award is for work in fields of foods, drugs, cosmetics, feeds, fertilizers and pesticides, or for use in general analytical chemistry.

Jonas Carol, of the U.S. Food and Drug Administration, won the 1960 award for his outstanding contributions in advancing the frontiers of the analytical methodology of drugs.

Nominations must be submitted to the secretary of the association by April 1. Nominees need not be members of the association. Further information about the award may be obtained from the secretary, William Horwitz, Box 540, Benjamin Franklin Station, Washington 4, D.C. «

FOR WANT AD RESULTS:
The Northwestern Miller

What should a baker expect from his flour supplier?

THREE THINGS: experience, integrity, ability. Your flour supplier should have all three. How does Russell-Miller measure up?

Few flour millers have more years of experience than Russell-Miller. For more than three-quarters of a century Russell-Miller has specialized in the milling of fine flour. These years have involved us in every problem and accomplishment in the baking industry.

And not only does Russell-Miller have this greater experience in flour production, the men who call on you have a record of experience unmatched by any other milling company. The average length of service of our sales representatives is *18* years. These men have dedicated their entire lives to the flour business.

Integrity? This is the most important quality. It is integrity that leads a company to serve you honestly and energetically. It is the kind of quality that prompts bakers to rely on Russell-Miller Flours when they bake experimentally to set standards for their line.

It is the kind of moral responsibility that prompts Russell-Miller to maintain stringent quality control, to make sure that an inferior product never leaves our mills.

It is the kind of moral responsibility that prompts us to support major crop improvement associations—in an effort to make sure the best possible wheat is being grown for your flour.

And what about ability? This is the factor that makes it possible for an experienced and morally responsible miller to really *do* something constructive to help bakers.

Russell-Miller *has* the capacity to make effective contributions to baking. We are one of the world's largest milling companies, with elevators and mills strategically located in the best wheat areas. We have available to us one of the world's greatest storage capacities; we have ready-at-hand at all times just the right wheats you need for your flours.

Russell-Miller has the resources to maintain the very latest milling machinery and methods, to assure you just the right flour. And these resources enable us to send specialists every year into the heart of the wheat growing areas in advance of the harvest to collect wheat samples which are experimentally milled. Result? We know exactly which wheat to buy for the exact type and quality of flour you need.

What should a baker expect from his flour supplier? Experience, integrity, ability. The next time you order flour, check off these qualities in your mind. Then ask yourself if your flour supplier measures up to Russell-Miller.

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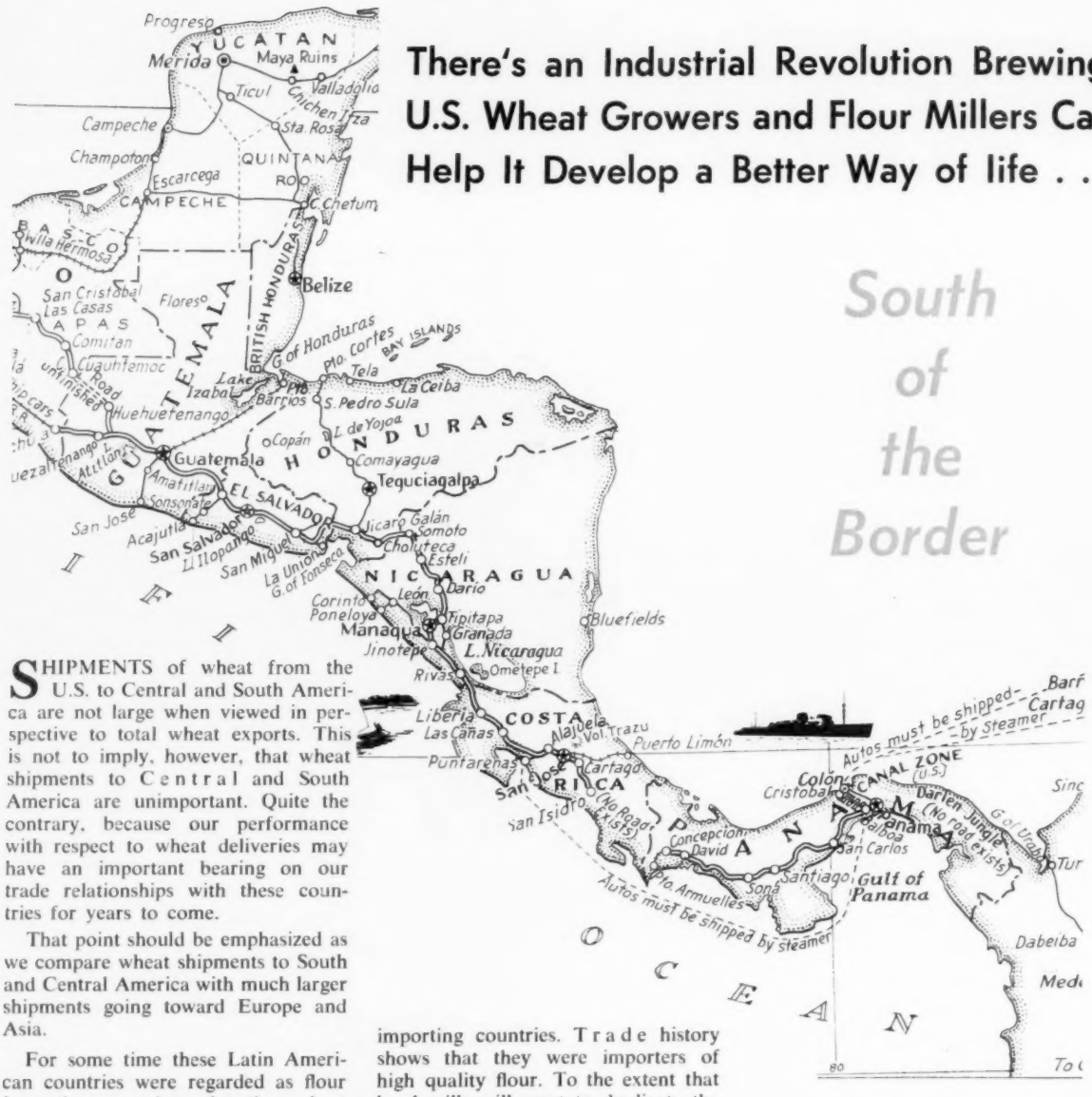
South of the Border



SHIPMENTS of wheat from the U.S. to Central and South America are not large when viewed in perspective to total wheat exports. This is not to imply, however, that wheat shipments to Central and South America are unimportant. Quite the contrary, because our performance with respect to wheat deliveries may have an important bearing on our trade relationships with these countries for years to come.

That point should be emphasized as we compare wheat shipments to South and Central America with much larger shipments going toward Europe and Asia.

For some time these Latin American countries were regarded as flour importing countries rather than wheat importing countries. Trade history shows that they were importers of high quality flour. To the extent that local mills will want to duplicate the quality of flour which had been imported, it will be necessary for them to place special emphasis on quality wheat for local milling. This was emphasized in each of the countries we visited. Local bakers were constantly stressing the need for high quality flour. In some countries it is not always possible for local millers to produce the kind of high quality products the local baker demands. The local government, in an attempt to assist their home growers of wheat, require their mills to grind fixed proportions of domestic wheat with imported wheat. Most wheats grown in Central and South America are of soft types which do not yield a strong flour, hence it is difficult for the local miller

Latin America, cradle of many hopes and plans, is breaking at the seams with grandiose ideas of expansion. U.S. wheat growers and flour millers can be participants, if they so choose. The accompanying report is based on a tour of Guatemala, El Salvador, Nicaragua, Colombia and Peru. Participants were Walter Abrahamson, Minot, N. D., manager, Farmers Union Elevator; Arthur Knorr, Sawyer, N.D., member, North Dakota Wheat Commission, and George Wilkens, executive vice president, Minneapolis Grain Exchange. It was sponsored by the Foreign Agricultural Service, U.S. Department of Agriculture, and Great Plains Wheat, Inc., of which the North Dakota Wheat Commission is a member. Because the report is based upon information gathered in a very short space of time, members of the team suggested it be described as their impressions. They feel it must be evaluated against reports submitted by hundreds of other technicians working in these countries. Based upon their contacts with wheat importers, flour millers, government officials and others, however, they believe the comments to be an accurate and factual report on conditions as found in the countries visited.

BLACK & WHITE FACTS

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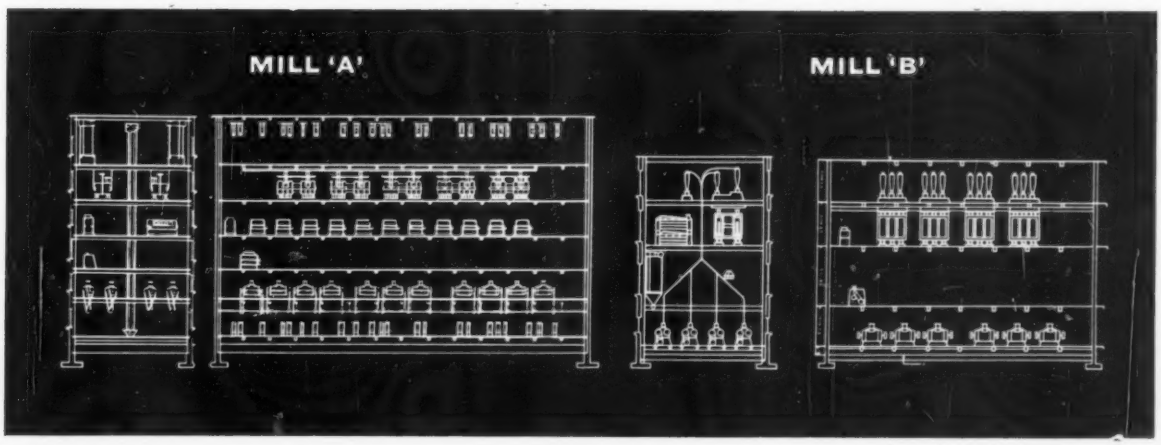

Take a good look at the two mill layouts shown above. Both mills produce the same output but Mill 'B' costs less than half the other! Why? Because Mill 'B' has modern high capacity Robinson equipment which gives the same output from fewer machines in less space and with reduced overall capital costs. The saving does not end there! With fewer but more efficient machines there are further savings on insurance, labor, maintenance, power and depreciation.

LET THE FACTS SPEAK FOR THEMSELVES!

Plant and capital cost breakdown (Screenroom omitted)

	PLANT				BUILDING		TOTAL COST
MILL 'A'	TYPE	NO.	SIZE	TOTAL SURFACE	FLOORS	TOTAL FLOOR AREA	
	Rollermills	44	10 in. × 40 in.	3,520 in.	6	26,904 sq. ft.	$675,125
	Plansifters	10	6 section 12 sieves deep	3,595 sq. ft.			
	Purifiers	11	Double 450 mm. sieves	211.2 sq. ft.			

	PLANT				BUILDING		TOTAL COST
MILL 'B'	TYPE	NO.	SIZE	TOTAL SURFACE	FLOORS	TOTAL FLOOR AREA	
	Rollermills	24	10 in. × 40 in.	1,920 in.	4	8,704 sq. ft.	$330,550
	Plansifters	4	6 section 24 sieves deep	1,355 sq. ft.			
	Purifiers	6	Double tier double 450 mm. sieves	220 sq. ft.			

SAVINGS: Capital cost $344,575. Space 18,200 sq. ft. Machines 31

(These estimates are based on European construction costs)

Robinsons have plenty more concrete facts as well as qualified men, machines and know-how to save you capital and production costs right from the start. Whether you're modernizing, expanding or planning a new mill contact Robinsons and you will get a service tailored to your requirements.

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Latin American Lesson (Continued)

many times to meet quality specifications desired by local bakers.

Let's discuss sales of U.S. wheat as flour versus sale in the form of wheat: It is a well established fact that Central and South American countries are striving to industrialize in every way possible. The trend toward milling domestically rather than importing flour is no exception. Only now, some of these Central and South American countries are shifting to domestic milling, while in other countries the practice is well established. In all fairness, it should be pointed out this involves risks to the U.S. wheat grower insofar as markets are concerned.

In Guatemala, for example, two modern mills have been organized. One is currently in operation, and the other hopes to be in operation sometime this month or in February. These two mills anticipate they will buy high quality U.S. winter and spring wheat for milling purposes.

However, they point out our prices must be competitive if they are to use U.S. wheat. If at a later date our prices for wheat are not competitive, U.S. wheat growers will have lost the market represented earlier by flour exports to Guatemala. Perhaps of even more concern to the U.S. wheat grower is development of a situation such as we find in Peru. It is our understanding that the country once imported U.S. flour. However, in recent years a law was passed in that country requiring the import of bran and middlings in an amount equaling 25% of the flour imports. With a limited livestock industry and a limited market for these feed ingredients this local law has effectively stopped importation of flour.

Peru has a limited number of flour mills. Since no longer required to meet the test of high quality strong flour from the U.S., they are free to resort to high extraction rates and give little attention to the bakers' demand for high quality flour for breadmaking. Under these circumstances it is no longer a requirement that mills import high quality wheats, and it becomes practice to buy a volume of wheat at the lowest price without regard to how it will perform in the bake shop.

Here, we believe, is an example of how local milling coupled with local regulations prohibiting importation of quality flour has actually placed the quality wheat grower of the U.S. in a difficult position to compete. It appears to us the Central and South American markets are most likely to be developed to their full potentiality through a combination of flour exports and wheat exports to those nations. This will insure continued emphasis on quality which should in turn increase wheat consumption in Central and South American countries.

Bagged Wheat Versus Bulk Wheat Shipments

We learned the countries of Guatemala, El Salvador, Nicaragua and Colombia are not equipped to receive wheat in bulk. It has always been their custom to import and move wheat in large bags weighing from 120 to 150 lb. Obviously this method adds substantially to the cost of placing wheat products at disposal of the consumer. To the extent that retail prices will influence levels of wheat consumption in Central and South America, careful study should be given to construction of bulk handling facilities both at the seaboard and interior mill positions. Bulk handling facilities do exist at Lima, Peru, but we are of the impression bulk handling is not possible at most interior points and at most other cities in that country. We understand the subject of construction of

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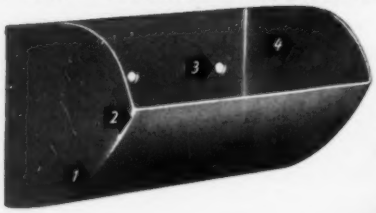

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CALUMET CUPS

terminal facilities for bulk handling of grain has already received careful study in the country of Colombia, and from our conversation with millers in Guatemala, they too are giving serious attention to such improvements.

The one mill in operation in Guatemala City recently received a small shipment of wheat in bulk which was unloaded at Puerto Barrios on the north coast. The new mill, Molinos De El Salvador, S.A., in operation, is equipped to receive wheat by bulk, but we were advised that bag wheat is still delivered and opened up for dropping into the pits. They hope to have a situation improvement in the near future, and are looking forward to construction of bulk handling facilities on the south coast at the town of Acajutla.

New Mills, Their Capacity and Management

The Association of Millers in Guatemala, in cooperation with General Mills, Inc., now has its modern mill in operation equipped with machines manufactured in Italy. It will grind approximately 1 million bushels of wheat a year according to present plans. They intend to use high quality, imported wheat to manufacture a flour to be sold under a brand name.

In Guatemala City the bakers' association is organizing another small mill, and it is their intention to mill high quality spring wheat for their member bakers. Their anticipated needs may be as little as one thousand tons per month at the start, increasing to double that amount in the years ahead.

In Salvador, two new mills have been completed in recent months. The larger mill "Molsa" is capitalized in large part by local businessmen. They operate under contract with the Pillsbury Co. and this firm gives major attention to quality control. This mill, like the other new mill in Salvador, Deininger Co., is equipped with Swiss manufactured milling equipment. The Molsa mill is operating at 85 tons a day at present, and hopes to reach a maximum of 200 tons a day. The new Deininger mill will probably rate a capacity of about 35 tons a day. It also is new and modern in every detail.

Reported Criticism From El Salvador

Before leaving Minneapolis for New Orleans, we had information a shipment of spring wheat originating at that port had provoked complaints from a mill at San Salvador. While in New Orleans we were advised by the exporter the Deininger mill was not dissatisfied with the shipment and that, in his opinion, the complaint had been solicited and registered by a technician operating a laboratory at Minneapolis.

In San Salvador we discussed this wheat shipment with Mr. Altschul of Deininger Mills, and it was our conclusion he was not dissatisfied. He was not thoroughly familiar with U.S. grades or with procedures that would insure him the quality of wheat he wanted for his milling operation. On this particular shipment he had requested 14.5% protein wheat grading No. 1 Northern Spring.

We examined samples of the shipment, and it appeared to us the originator had blended some high protein wheat with other spring wheat of lower protein test so that the total lot would test out 14.5% protein. More than likely it was this mixing (common procedure among warehousemen) which prompted the laboratory technician to register his complaint. We were left with the impression Deininger Mills would continue to solicit offers from U.S. exporters.

Special Observations In Colombia

The National Institute of Supply

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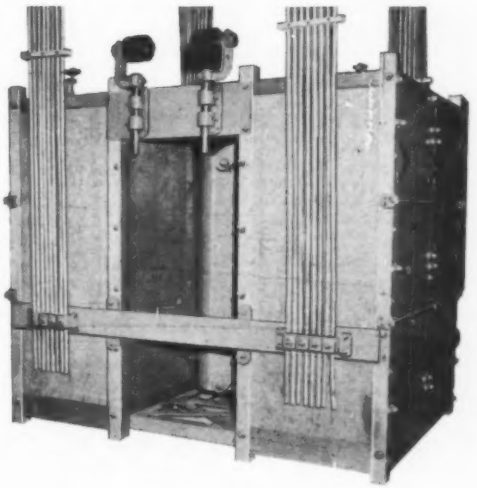

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FOR WANT AD RESULTS:
The Northwestern Miller

Report from 'Down South' (Continued)

(INA) appears to have created a situation in this country with respect to flour imports that leaves the local bakery trade unhappy.

The Public Law 480 agreement between the U.S. and Colombia for fiscal 1960 called for Colombian imports of U.S. wheat totaling 270,000 tons. Along with this amount it was anticipated 54,000 metric tons of flour would be moved.

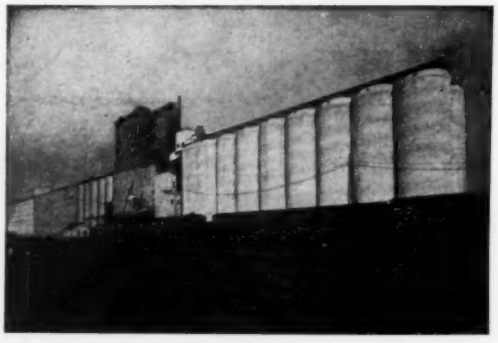
The Institute of Supply has, for the time being, terminated flour imports, and we learned the local bakers in Bogota are greatly disappointed. We did spend a few minutes with the assistant manager of INA, and he placed considerable emphasis on the need for disposing of domestic wheat. It was evident to us he was not quality conscious as far as flour production was concerned. If the government of Colombia insists upon expanded wheat production through high supports (current price support level $4 bu.), it could have a reverse effect on per capita consumption in that country. Nutrition studies conducted by Millers National Federation reveal some startling results in increased per capita consumption in Colombia. They are of the opinion, if quality wheat flour could be made available, further increases would be easily obtainable.

In Colombia in particular, it is our opinion, the U.S. wheat growers' interests are best served through a program calling for importation of some high quality flour along with U.S. wheats to be processed in Colombian mills. As stated earlier, this would force quality comparisons onto the local miller. So long as the consumer has the opportunity to make quality comparisons, the market for wheat in Colombia should continue to expand. Enlarged markets are, in the long run, to best interest of the U.S. wheat farmer.

Grain grades and the part they play in international grain trade also merit some discussion.

It is evident to us that many individuals engaged in the marketing process have an interest in grades. This includes the farmer, those engaged in the bulk handling and marketing of the product, and the individuals engaged in processing and retailing the finished products. While we found no serious criticisms of the quality of shipments of U.S. wheat, there exists an underlying belief that improvement could be made in the grades or in contract specifications to improve understanding between the buyer and the seller. There exists a difference of opinion whether this should be done within the grade standards in the U.S., or whether it should be done through the writing of additional specifications outside of the standard. It appears to us that to the extent the wheat grower associations are interested in expanding international sales of wheat through improvement or tightening of the grade standards, the growers themselves must carefully evaluate what effect tighter grain standards may have on their farming operations as they market grain through the country elevators. Some foreign buyers of U.S. wheat

STRATTON-THEIS GRAIN CO.



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have been impressed with the quality of wheat as they saw it coming from the combines in U.S. wheat fields.

If it is true that wheat coming from the combine is of higher quality than that reaching foreign and domestic processors, there might then be some basis for studying grade tolerances, particularly in the lower grades. It is our opinion grade changes should be carefully studied by the grain growers, warehousemen and the importer before such changes are adopted.

Broader Use of Technical Advances

Gluten strength, being important to the baker for an attractive, uniform loaf of bread, has of course caused U.S. mills to develop such tests as the farinograph, sedimentation and the test for fat acidity.

Under normal circumstances, the fat acidity test might not be important, but as wheat stocks accumulate, and certain reserves are held for a long period of years, this takes on new significance. The sedimentation test was referred to frequently as we talked about wheat marketing in various countries.

Again in conference with U.S. Department of Agriculture officials, this test was referred to as a useful tool which could serve both the buyer and the seller. We believe the time is at hand to give careful study to the possibility of making more general application of the sedimentation test in wheat export trade. Application of this test to individual carload lots of wheat is not difficult.

However, its application to cargoes of wheat may introduce marketing problems not known to this committee. Therefore, it may be necessary to work out some satisfactory procedure before general application is possible.

We gained the impression it is not an uncommon practice in Central and South American mills to market a granular flour taken from the stream as they grind winter or spring wheat into flour for breadmaking. This is used in the manufacture of various macaroni products. Products made from winter or spring wheat flour do not have the quality characteristics possible when durum semolina is used.

We believe new sales effort covering both durum and semolina flour made from high quality durum, should effectually increase sales of this product to Central and South American countries. At the present time U.S. subsidies are not applicable to durum exports, and this effectively eliminates it from export trade. A decision with respect to application of durum subsidy is of course the first step.

In each country visited, we found real interest in credit sales of wheat. This is obvious when one considers that interest rates in the U.S. are approximately 4%, while rates across Latin American countries are at least 10 points higher, running in the neighborhood of 14 to 20% per annum.

In a number of countries we found this interest rate difference used in part to cover the higher cost of U.S. wheat. It would appear, more general use of the arrangement known as "CCC credit" would expand wheat sales to Central and South American countries. These arrangements, however, could lead to more government-to-government trading of grains. We raise the question whether this trend is desirable, in the interest of the wheat grower of America and in the interest of the consumer in Latin American countries.

It was our impression the agricultural attaches in countries visited were well posted on problems of wheat marketing. Some countries visited are not now provided the full time services of an attache, and it may be desirable to consider expansion of staff so that more countries can benefit from the services of these men. «

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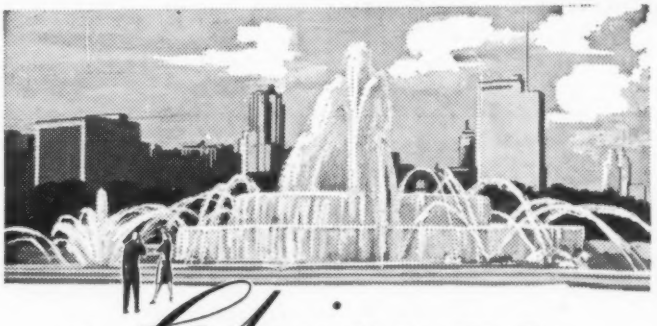

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WHERE THEY ARE MEETING

January

Jan. 14-17—Ohio Bakers Assn., annual convention; Carter Hotel, Cleveland, Ohio; sec., Clark L. Coffman, Seneca Hotel, Columbus, Ohio.

Jan. 17—Michigan Bakers Educational Conference; Kellogg Center, Michigan State University, E. Lansing, Mich.

Jan. 19-20—National Soft Wheat Millers Assn.; Brown Hotel, Louisville, Ky.; sec., R. M. Huffman, 1694 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4.

January 20-21—District 10, Association of Operative Millers; Fresno Hacienda Motel, Fresno, Cal.; sec., Gene Thomas, California Mill Equip. Co., San Mateo.

Jan. 22-24—Pennsylvania Bakers Assn., winter convention; Pittsburgh Hilton Hotel, Pittsburgh, Pa.; sec., Theo. Staab, 600 North 3rd St., Harrisburg, Pa.

Jan. 28—District 4, Association of Operative Millers; Pick-Nicollet Hotel, Minneapolis, Minn.; sec., W. A. Howie, J. K. Howie Co., Metropolitan Bldg., Minneapolis.

Jan. 29-31—Potomac States Bakers Assn., 45th annual winter convention; Lord Baltimore Hotel, Baltimore, Md.; sec., Edwin C. Muhly, 1126 Mathieson Bldg., Baltimore, Md.

Jan. 31-Feb. 1—Agricultural Industries Forum, University of Illinois, Urbana; for program and reservations, contact Department of Agricultural Economics, University of Illinois, 305 Mumford Hall, Urbana, Ill.

February

Feb. 3-5—Bakers Association of Carolinas, annual stag outing; The Carolina, Pinehurst, N.C.; sec., Mac Inscoe, V. C. Ambler Co., Paris, Texas.

Feb. 11—District 14, Association of Operative Millers; Denver, Colo.; sec., John Streit, Wallace & Tiernan, Inc., Denver.

February 24-25—District 11, Association of Operative Millers; Roanoke Hotel, Roanoke, Va.; sec., James N. Campbell, Sterwin Chemicals Inc., Charlotte, N.C.

Feb. 25 - March 4—National Retail Bakers Week; chm., Walter R. Schuchardt, 735 West Sheridan Road, Chicago.

March

March 6-9—American Society of Bakery Engineers, annual meeting; Edgewater Beach Hotel, Chicago, Ill.; sec., Victor E. Marx, Rm. 1354 LaSalle Wacker Bldg., 121 W. Wacker Drive, Chicago 1.

March 8-9—Nebraska Grain & Feed Dealers Assn., annual convention; Sheraton-Fontenelle Hotel, Omaha, Neb.; sec., Howard W. Elm, Trust Building, Lincoln, Neb.

March 10—District 7, Association of Operative Millers, Biltmore Hotel, Oklahoma City, Okla.; sec., Harry H. Stark, Ross Machine & Mill Supply Co., Oklahoma City.

April

April 4—Allied Trades of the Baking Industry Div. 4, annual assembly. Abraham Lincoln Hotel, Reading, Pennsylvania; sec., Vernon N. Bush, 330 Bern St., Reading, Pa.

April 7-8—Districts 1 and 2, Association of Operative Millers, joint meeting; Manhattan, Kansas; contact Prof. E. P. Farrell, Kansas State University, Manhattan, Kansas.

April 9-12—Oklahoma-Arkansas Bakers, annual convention; Western Hills Lodge, Wagoner, Oklahoma; sec., Jno. C. Summers, Oklahoma State Tech., Okmulgee, Oklahoma.

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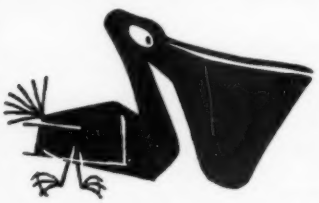
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April 9-13—American Association of Cereal Chemists, annual convention; Baker Hotel, Dallas, Texas; sec., Ray Tarleton, 1955 University Ave., St. Paul 4, Minn.

April 10-12—Pacific Northwest Bakers Conference; Multnomah Hotel, Portland, Ore.; sec.-mgr., Roger Williams, P.O. Box 486, Salem, Ore.

April 13-15—Southern Bakers Assn., 47th annual convention; Palm Beach Biltmore Hotel, Palm Beach, Fla.; sec., Benson L. Skelton, Henry Grady Bldg., 26 Cain St. N.W., Atlanta 3, Ga.

April 16-18—Texas Bakers Assn., annual convention; Granada Hotel and Inn, San Antonio, Texas; sec., Guy J. Lichlyter, 1121 National Bldg., Dallas 1, Texas.

April 16-19—Associated Retail Bakers of America, annual convention; Hotel Sherman, Chicago, Ill.; sec., Miss Trudy Schurr, 731-35 W. Sheridan Rd., Chicago.

April 23-26—Millers National Federation, annual convention; Shoreham Hotel, Washington, D.C.; sec., John Sherlock, MNF, 309 W. Jackson Blvd., Chicago 6.

April 23-28—Grain Elevator & Processing Superintendents, annual convention; Baker Hotel, Hutchinson, Kansas; sec., Dean M. Clark, 1115 Board of Trade Bldg., Chicago 4.

May

May 20-21—Iowa Bakers Assn., annual convention; Des Moines Hotel, Des Moines, Iowa; sec., Earl F. Weaver, 6416 Colby Ave., Des Moines 11, Iowa.

May 20-22—Rocky Mountain Bakers Assn., annual convention; Continental Denver Motor Hotel, Denver, Colo.; sec., Fred Linsenmaier, Box 871, Denver 1.

May 22-25—Association of Operative Millers, annual technical conference and trade show, Hotel Pick-Nicollet, Minneapolis, Minn.; sec., Donald S. Eber, 639 Board of Trade Bldg., Kansas City, Mo.

May 26-28—National Association of Flour Distributors, annual convention; Hilton Hotel, Pittsburgh, Pa.; sec., Philip W. Orth, Jr., Ph. Orth Co., 304 E. Florida St., Milwaukee 4, Wis.

June

June 4-6—New York State Association of Manufacturing Retail Bakers, annual convention; Westchester Town House, Yonkers, N.Y.; sec., Frank E. Englert, 135 Primrose Drive, New Hyde Park, N.Y.

June 4-6—The National Council of the Baking Industry, annual conference; Royal York Hotel, Toronto, Ont., Canada; managing director, R. H. Ackert, 4 N. Sherbourne St., Suite 105, Toronto 5, Ont., Canada.

June 10-12—Bakers Association of the Carolinas, annual convention; Ocean Forest Hotel, Myrtle Beach, South Carolina; sec., Mary E. Stanley, P.O. Box 175, Rockingham, S.C.

July

July 16-19—West Virginia Bakers Assn., 1961 convention; the Greenbrier Hotel, White Sulphur Springs, W.Va.; sec., Mrs. Edward R. Johnson, 611 Pennsylvania Ave., Charleston 2, W.Va.

September

Sept. 17-18—Wisconsin Bakers Assn., annual convention; Plankinton House, Milwaukee, Wis.; sec., Fred H. Laufenburg, 6173 Plankinton Bldg., 161 W. Wisconsin Ave., Milwaukee 3.

October

Oct. 7-12—1961 Baking Industry Exposition; Convention Hall, Atlantic City, N.J.; sec.-treas., Harold Fiedler, 20 N. Wacker Drive, Chicago 6, Ill.

CALENDAR FOR 1961

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Tote Booklet

A 32-page booklet, "Tote, A Complete System to Solve Your Bulk Material Handling Problems," is available from Tote System, Inc. It is catalog No. 8, which gives details of all ramifications of the Tote system as an inplant and interplant system; as an automated system; as distinct storage units, discharge hoppers and shipping containers. Detailed explanations of filling, discharging, storing, shipping, automating Tote bins in any given situation are included in color. The booklet also contains a form for estimating costs versus savings in any given plant.

Circle No. 4705
on Reply Form for Details

Fumigant Folder

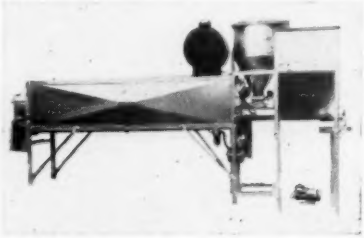
A low dosage, hot spot grain fumigant packed in small tin cans is described in a folder issued by Ferguson Fumigants, Inc. The units, approximately the size of beer cans, are packed 12 to the case with a gross weight of 13 lb. For hot spot treatment, each can is said to be approximately equal in insect-killing power to a gallon of carbon tetrachloride

base fumigant. It is a patented chemical mixture of ethylene dibromide and methyl bromide said to be more effective killing insects than either of the chemicals used alone. Application is made through a ¼ in. I.D. galvanized pipe probe inserted directly into the hot spot. The highly concentrated mixture of the fumigant permits it to be packed in small containers offering great convenience for hot spot grain fumigation. Copies of the brochure are available.

Circle No. 4706
on Reply Form for Details

Seed Treater

O. W. Kromer Co. has announced basic improvements in its Kromer



Seed Treater for 1961, enabling the unit to handle any sticky powdered or liquid chemical and to coat any seed completely. This uniform coat is said to prevent spotty treatment, sticking of the treated seed to form lumps, or wasted chemical. The treater features a newly designed chemical feed rotor on which the segments are blown clean on each revolution by compressed air which carries the chemical into the treating chamber. It also features an air compressor of approximately twice the capacity of earlier models and a heavier variable speed drive on the seed feed auger, states the manufacturer.

Circle No. 4707
on Reply Form for Details

Research Catalog

Mann Research Laboratories, Inc., has available its 1960-61 reference guide and price list of assayed biochemicals for research. There are sections on amino acids, biochemical reagents, carbohydrates and related products, enzymes, coenzymes and related products, fatty acids, and many more. The book has a new section on enzyme substrates, listing 80 separate substrates along with the specific enzyme systems for which they are intended. Copies are available upon request.

Circle No. 4708
on Reply Form for Details

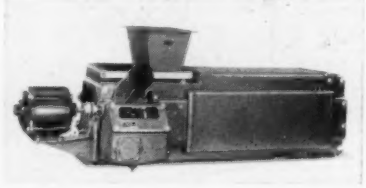
Fast-Acting Cleaner

"Lo-Foam" is the name of a liquid, synthetic cleaner developed by Multi-Clean Products, Inc., especially for use with scrubbing machines and vacuum cleaners. Lo-Foam is said to be a very high concentration of floor cleaning ingredients combined in a unique formulation to give maximum cleaning results with minimum foam build-up. It is transparent, light in color, has a pleasing odor, and readily mixes into solution. The manufacturer claims it can be used with complete safety on asphalt tile, rubber tile, vinyl, vinyl asbestos, linoleum, terrazzo, concrete, wood, marble, magnesite, ceramic or quarry tile. It also is useable for walls, windows, plastic furniture, metal doors and partitions.

Circle No. 4709
on Reply Form for Details

Volumetric Feeder

Wallace & Tiernan, Inc., has added the Merchen Volumetric feeder to its line of equipment. The unit measures all free-flowing, powdered, granular or lumpy solids by volume and has a maximum capacity of 3,600 cu. ft. per hour. The firm claims that the Merchen is the only volumetric feeder with belt-and-feed-gate design.



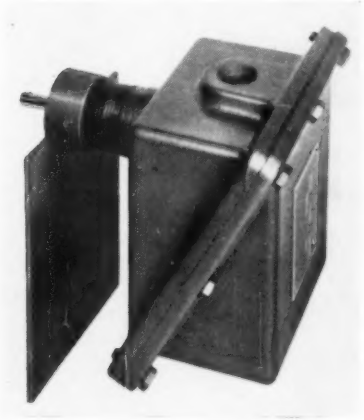
Models are available with 9 in. or 18 in. Buna-N feed belts. The smaller model feeds from 0.1 to 600 cu. ft. per hour; the 18 in. model from 0.6 to 3,600 cu. ft. per hour. Depending on the density of the material fed,

this equals 3 to 3,000 lb. min. Two additional advantages claimed are: (1) Either size can be converted to a gravimetric feeder by adding weighing components and (2) an optional off-feed switch stops the feeder or actuates an alarm when feed falls below a selected rate. An illustrated, four-page catalog on the feeder is available from Wallace & Tiernan.

Circle No. 4710
on Reply Form for Details

Rotation Detector

The electronics control division of Flo-Tronics, Inc., has introduced a unit for monitoring shaft rotation at



any point in a conveying, handling or processing system. The unit is Flo-Tronics' "Flo-Motion" shaft rotation detector which can be wired into an interlock system to provide automatic shutoff of all units in the system if stoppage or excessive variation in shaft speed occurs in any one unit being monitored. Flo-Motion Model M300 permits a relatively wide variation in shaft speed before signalling stoppage or slowdown. Three versions of this model are provided covering input shaft speeds from 10 to 40 rpm., 40 to 90 rpm. and 90 to 150 rpm. Features claimed include ability to detect speed variations small as one rpm., warning signal if any component fails or power is interrupted, and dust-proof or explosion-proof housing, among others. The firm has a descriptive catalog sheet handily punched for loose leaf notebooks, which it will furnish upon request.

Circle No. 4711
on Reply Form for Details

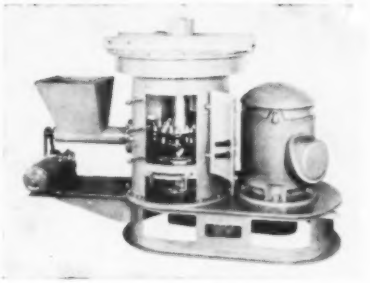
Dust Collection

A brochure on special problems of dust collection is available from National Filter Media Corp. It gives relative strength, cost ratios and resistance of various dust collection fabrics to factors such as flame, acid, alkali, flex and abrasion. The firm offers its special materials and engineering background for solving such problems as inflammable dust, mildew, abrasion and pressure drop versus retentivity.

Circle No. 4712
on Reply Form for Details

Small Pulver-Mill

The Sturtevant Pulver-Mill, an impact unit with integral air classifier, now is available as a 15-in., 25 h.p. mill capable of producing up to 15 cwt. hr. Sturtevant Mill Co., the manufacturer, states that the mill is for small-quantity grinding of soft and medium-hard materials. It offers patented, double-impactor grinding, exclusive deflector wall construction, and adjustable air classification to allow end product selection. Introduction of the small-capacity mill marks the second addition to the line since the original, 5,000 lb. hr. unit was



introduced in May of 1959. Just a year after initial introduction, May of 1960, Sturtevant announced availability of mills capable of crushing up to 15,000 lb. hr. Now it is offering the small capacity mill. Information and service are available through Sturtevant's grain processing division.

Circle No. 4713
on Reply Form for Details

'Kraftpacker' Booklet

Kraft Bag Corp., multiwall manufacturing subsidiary of Gilman Paper Co., offers an eight-page brochure on "The Kraftpacker," the automatic, open-mouth bag filling machine for which the company is exclusive sales agent. The Kraftpacker's strongest feature, says the company, is its ability to bag 400 to 500 tons of free-flowing material in an eight-hour day with accuracy of 4 oz. plus or minus per 100 lb. The brochure contains photographs of the equipment in operation and of the portable Kraftpacker

Circle No. 4714
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Bench Scales

Heavy duty platform-type bench scales for general purpose industrial weighing are discussed in a bulletin offered by Exact Weight Scale Co. Scales in any of four capacities are

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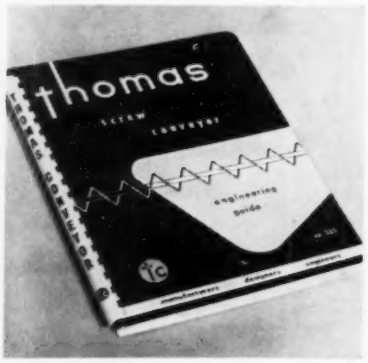
Circle No. 4715
on Reply Form for Details

Screw Conveyors

Thomas Conveyor Co. will make available to qualified personnel who use or specify screw conveyor equipment its Thomas Screw Conveyor Engineering Guide. The 150-page guide contains several pages showing typical installations of screw conveyors. There are three sections of charts and artwork on engineering, components and layouts covering the 83 center pages. Final portion of the catalog-size guide shows additional products which Thomas manufactures, a part number index, a general index, and some of the facilities of the 91,000 sq. ft. Thomas plant.



Circle No. 4716
on Reply Form for Details

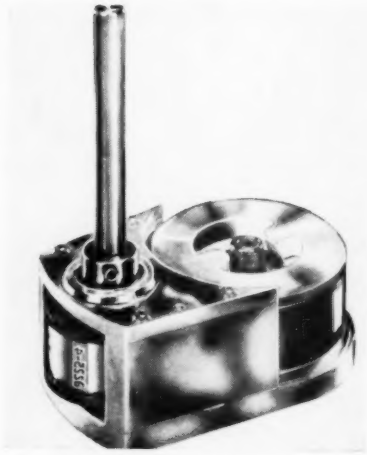
Prefabricated Ovens

Fostoria Corp., manufacturer of radiant ovens, now offers infrared, prefabricated sections for do-it-yourself assembling in industry and research where such ovens are used. Low cost and easy assembly are featured claims for the sections. All components are pre-drilled for ¼ in.-20 standard machine screws, and all standard hardware items required to fasten sections together are included without additional cost.

Circle No. 4717
on Reply Form for Details

Coding Machine

Thomas Engineering Co. announces its Teko Model 100 series of coders and printers designed for attachment to packaging machines or powered conveyors of all types. According to Thomas, they synchronize with action of the parent machines, printing into boxes, cartons, kraft paper or other porous or semi-porous surfaces. Inking of the coders is done by a roll of



"Porelon" solid ink. This Porelon roller, a self-contained inker, replaces fluid inks, solvents, fountains, felts and the maintenance connected with such items, states the company.

Circle No. 4718
on Reply Form for Details

Moisture Testers

A fast, simple method of checking accurately Steinlite moisture testers in the field is announced by Seedburo Equipment Co., exclusive distributor of Steinlites. This major development will permit Steinlite owners to determine almost immediately the condition of their testers with assurance that they are testing properly, it is claimed. Previously, Steinlites in the field were checked with grain samples.

Circle No. 4719
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Please send me more information. I have circled code numbers of items in which I am interested.

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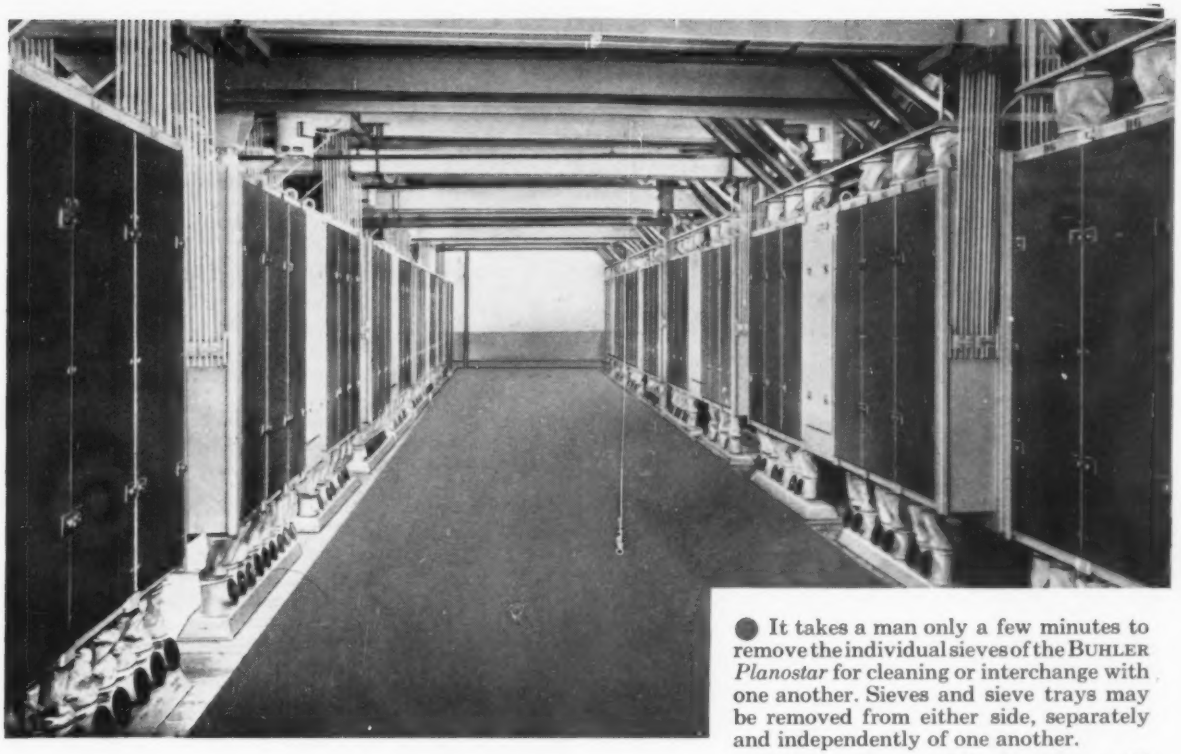


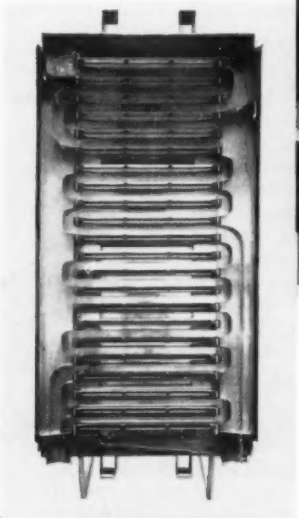
Sieves and trays can be removed individually in this High Efficiency Sifter

● It takes a man only a few minutes to remove the individual sieves of the BUHLER *Planostar* for cleaning or interchange with one another. Sieves and sieve trays may be removed from either side, separately and independently of one another.

This is only one of the benefits you'll enjoy when you install these modern dust-tight, leak-proof sifters.

Highest Capacity. The practical design of this sifter complies with the requirements of millers for high efficiency and optimum sifting effect in a small space.

Write for more information on the *Planostar*. You'll be under no obligation.



CROSS SECTION through a sifter compartment. Stock rides over sieves like a belt without obstruction by narrow spots. Flow channels are quickly removable without tools and are built directly into the doors. (See photo at right above)

SIFTER FLOW is easy to change due to use of standard, interchangeable sieves and trays. The sifting pattern can be selected without distributor for a single, double, or triple flow . . . thus adjusting the sifting height of the stock to obtain the most efficient sifting action.

BACK OF SIFTER DOOR is easily removed for cleaning. This illustrates another important advantage of the *Planostar:* the highest standards of sanitation can be maintained because the entire sifter is designed so its parts are readily accessible for inspection and cleaning.

BUHLER

Serving the Flour Milling Industry since 1860

100 YEARS BUHLER 1860

THE BUHLER CORPORATION
4207 Nicollet Avenue, Minneapolis 9, Minnesota

SPROUT, WALDRON & CO., INC.
12 Logan Street, Muncy, Pennsylvania

BUHLER BROTHERS (Canada) **LTD.**
24 King Street West, Toronto 1, Ontario

What's Ahead In '61?

Look for Advances in Production Procedures . . . Greater Stature for Quality Control . . . Expansion of Markets . . .

AOM Looks Ahead

STUART BUTLER
President
Association of Operative Millers

My sincere good wishes to all AOM members and to millers throughout the world for a very happy new year.

Although the past year has been a difficult one for U.S. millers and only average for the Canadians, the consensus is that business in 1961 will be slightly better than the average of the past four years for both countries, with exports being maintained and domestic consumption on the upgrade.

Stuart Butler

Labor and related operating costs have continued their upward spiral, causing uneasiness in the industry. It behooves everyone in the milling world to work and study harder to eliminate unnecessary wastage and inefficiencies.

AOM members will play an ever increasing part, now well recognized by management, to effect these improvements.

In conclusion, I look forward to meeting all members at the AOM conference in Minneapolis in May, and trust that 1961 will be a year of peace and prosperity for everyone everywhere.

DONALD S. EBER
Executive Vice President
Association of Operative Millers

I have confidence that 1961 should be a good year for the milling industry. With continued effort on the part of the entire industry concerned, we should see continued progress. Our association will leave no stone unturned to discover better methods, more efficient, more economical, and sanitary procedures for the milling industry.

Donald S. Eber

I believe that the slogan of the Association of Operative Millers, "Proficiency, Fellowship and Cooperation," will prove to be the most important factor in our future success.

for better sanitation at lower cost:

SYNTHETIC PLASTIC COATINGS
applied professionally by
Western Waterproofing Company

Modern science has developed effective new materials for better, lower cost sanitation in milling production and storage areas. The new synthetic resins and plastics form slick, tough coatings that fill dirt-catching, insect-harboring crevices in floors, walls, ceilings. The smooth, unbroken plastic surface is easier to clean, and stays clean longer. These versatile products—of which there are many types for a variety of uses—can be applied over any type of construction: wood, metal, concrete, masonry. They are available in a number of colors, textures and price ranges.

Let us show you how these modern coatings can help you with the big problem of sanitation in your mill. Send coupon today. 6018

WESTERN WATERPROOFING CO., Inc.
1223 Syndicate Trust Building
St. Louis 1, Missouri

Please let me know how coatings can improve sanitation in my plant.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

AACC and the Future

DR. JOHN A. JOHNSON
President
American Association of Cereal Chemists

The year of 1961 will bring several advances in the fields of flour and feed milling and in bakery production. Advancements can be expected in view of the extension of our knowledge through research during the past year or two. One area, in which research has been particularly fruitful, is acquisition of more information and the mechanism of the action of flour maturing agents. As a result of a better understanding of the action of oxidizing agents, new and more efficient maturing agents will probably make their appearance during 1961.

Dr. J. A. Johnson

Progress in continuous bread production methods will continue during the coming year. Part of this advancement will become a reality as a result of research being conducted on the constituents responsible for bread flavor. This could bring about the development of new and expanded markets for bread. Could it be that in 1961 there will be a reversal of the downward trend of the per capita consumption of bread?

Quality control of flour and feed mill products will attain even greater stature during the coming year. The American Association of Cereal Chemists will continue to serve as a clearing house for all official methods of analysis of cereal products. The seventh edition of "Cereal

Laboratory Methods," which will serve as the quality control guide, will appear late in the year.

Many of our basic food industries will expand their markets to distant corners of the earth during the coming year as our means of communication and travel shrink the effective size of the earth. More and more will world economics dictate that goods must be produced in locations and under conditions of least waste. The lessening of the strength of trade barriers between nations may begin in this new year.

In these predictions for 1961, it is hoped that the American Association of Cereal Chemists will make major contributions toward their realization. On behalf of its officers and directors, I take this opportunity of wishing all a happy and prosperous new year. «

General Mills Reports Rise In First-Half Sales, Income

General Mills, Inc., has reported first-half sales of $285,281,188 for the June 1-Nov. 30 period of its current fiscal year in its regular, mid-year statement to stockholders. This compared with sales of $265,947,296 for the corresponding period of the previous year.

Net income for the first half of the current fiscal year was $5,914,060 compared with $4,392,599 for the corresponding period of the earlier year. Net income per share of common stock for the period was 75¢ compared with 54¢ last year.

Key Developments

Among key developments of the first half of the 1960-61 year was completion of basic construction of the first portion of GMI's new research center in Golden Valley, Minn., just west of Minneapolis. Also, a series of new products was introduced nationally, including two new cake mixes, Betty Crocker Toasted Coconut and Betty Crocker Milk Chocolate; "Route 900," a powdered dietary weight control supplement sold through dairies; and the chemical product XR-2000, a new epoxy co-reactant.

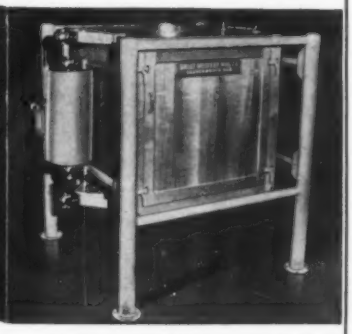
During the period, the company reports, it was honored at the Harmon International Air Trophy presentations for its balloons which carried Air Force Captain Joseph Kittinger aloft for his record-breaking parachute jumps.

In the grocery product line, General Mills also introduced a number of other products now in distribution in certain regions of the country, while still more are undergoing test marketing. «

NEW! FLOOR MOUNTED SIFTER

Sanitary — Tru-Balance For Quality Control

The TRU-BALANCE floor mounted SIFTER



It's new. A brand new sanitary sifting machine, developed by the Great Western Mfg. Company for rebolting flour before packers or bulk loading operation. Also used for screening any dry materials. Feed dresser, grader, etc.
Can make up to 8 separations if required. The most perfectly balanced floor mounted sifter made.
No vibration imparted to floor or building.
Write for complete details.

GREAT WESTERN Manufacturing Company
Leavenworth, Kansas
Ernest Schroeder — John E. Baker

UHLMANN GRAIN CO.
Chicago ◆ ◆ Kansas City
1480 Board of Trade — 1158 Board of Trade
We Solicit Your Hedges
MEMBERS OF
ALL LEADING COMMODITY EXCHANGES

Uniformity
the priceless quality in flour
yours always with . . .
Acme-Evans Flours
ANGELITE—cake flour
COOKIE KING—cookie and dough-up flour
CRACKER KING—cracker sponge flour
GRAHAM KING—100% soft wheat graham
PASTRY KING—low viscosity flour
Progressive Milling Since 1821
ACME-EVANS COMPANY, INC., INDIANAPOLIS 9, IND.

Centennial MILLS, INC.
1464 N.W. Front Avenue Portland 8, Oregon
Cable address: Centennial Mills, Inc., Portland, Oregon
Domestic and Export Millers.
Experienced in all types of bulk delivery.
New . . . complete quality control and baked products laboratory.
Complete line of fine quality Bakers' Flours.
Fancy Durum and Winter Wheat Granulars for macaroni industry.
MILLS AT: PORTLAND, SPOKANE, WENATCHEE

YOU CAN
RELY ON

Westcentral

FOR A CONSTANT
SUPPLY OF

Nebraska Wheat

FAMOUS FOR ITS HIGH
BAKING QUALITIES

Westcentral Cooperative
Grain Company

Grain Exchange :-: Omaha, Nebraska

Terminal and Subterminal Facilities in
Omaha, Lincoln, Fremont—and 250
Affiliated Country Elevators

BE AS PROUD OF YOUR JOB
AS WE ARE OF OURS, *for*
BREAD IS THE
STAFF OF LIFE

The
CONSOLIDATED FLOUR MILLS CO.

OFFICE: KANSAS CITY, MISSOURI
1590 W. 29 ST. • TELEPHONE LOGAN 1-2400
MILLS AT KINGMAN & WINFIELD, KANSAS
CAPACITY • 7,850 CWTS. —— STORAGE • 3,000,000 BU.

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C. D. Howe, Vigorous Figure On Canadian Scene, Succumbs

Clarence Decatur Howe, engineer by training, builder by profession, politician by choice—one of Canada's most colorful figures—died at his home in Montreal Dec. 31 of a heart attack. Mr. Howe was 75, and while not too well recently, his death reportedly was unexpected.

Clarence D. Howe

Long a controversial figure in the political arena, Mr. Howe had been chairman of the board of directors for Ogilvie Flour Mills, Ltd., since April 23, 1959. At that time he succeeded Gordon Ball, who died earlier in the year. During his 22 years as a Liberal cabinet minister (1935-1957) the forthright Mr. Howe held more cabinet posts than any other Canadian. Descended from Joseph Howe, a battling statesman from Nova Scotia, C. D. Howe actually was a New Englander who migrated to Canada and became a Canadian citizen in 1913. Though lost to the U.S. at that time, Mr. Howe held fast to the get-up and go of his Massachusetts forebears.

As those who knew him can testify, his one set purpose in life—driven by the fire of conversion from Americanism to Canadianism as a Christian saved from paganism—was to serve Canada, first, last and always.

Public Service Career

His career of public service in Canada included periods as minister of railways and canals, transport, munitions and supply, reconstruction, trade and commerce, and defense production. He was the federal government's boss-man of the Canadian Wheat Board and the Board of Grain Commissioners during the years that he headed the Department of Trade and Commerce.

Mr. Howe frequently was referred to as Canada's No. 1 optimist. He never lost that optimism following his personal defeat in the June 10 general election when the Liberal party was swept from power.

At the time of his defeat, the Montreal Star said editorially, "Mr. Howe, in his own field, was a figure distinct and unique in our politics, a very great figure, a man of vast talent and ability. It seems a pity that the little dogs are barking at his heels now, trying to prove to themselves that they are not little dogs at all, but great big masterful hounds shaking off the unimportant creatures that have been pestering them. In this they prove themselves smaller and far less generous than the man they attack." «

Just Punch and Pour

EASY SPOT FUMIGATION

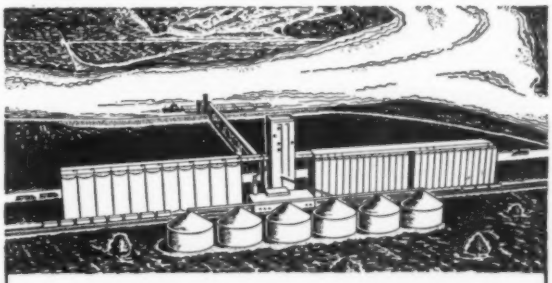
Mill — Bakery — Brewery

DAWSON 73 Spot Fumigant is fast acting and so effective that 1½ oz. in this 2-inch high can will give better insect control than a pint to a quart of commonly used spot fumigants. Safer to handle because premeasured and prepackaged. No hazardous job of transferring fumigant from big containers to bottles. No bottles to break. Easy to distribute. 50 shot cans go in one knapsack. **DAWSON 73** vapors penetrate deep stock and remain effective for as much as a week. Many users report essentially continuous freedom from infestation in their equipment from complete applications at three week intervals. Better results are cheaper with **DAWSON 73. (U.S. Patent 2,606,857)**

DAWSON LOW-DOSAGE FUMIGANTS

Detailed directions and can opener packed in every case of 48 cans. Ask for complete information and prices.

FERGUSON FUMIGANTS
INCORPORATED
P. O. Box 5868
Ferguson 35, Mo. Phone PErshing 1-0414



RIVER-RAIL ELEVATOR AT KANSAS CITY

Elevators in Kansas, Nebraska, Missouri, Colorado, South Dakota, Iowa and Oklahoma

Bartlett *and Company*

GRAIN MERCHANTS SINCE 1907

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OFFICES ALSO:
SIOUX CITY, IOWA
OMAHA, NEBRASKA
ST. JOSEPH, MO.
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BAltimore 1-1212

NOW—The Latest in Milling . . .

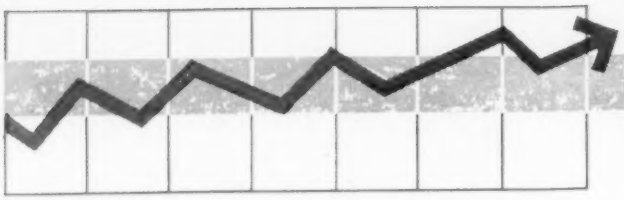
Our ALL-PNEUMATIC MILL

"Golden Loaf"— HOYT'S BEST FLOURS

. . . are milled in our completely modernized Pneumatic Mill on the tested and tried flow that has made these flours front-ranking since 1901.

BULK OR SACK LOADING Daily Capacity—5,500 Cwts.

TENNANT & HOYT COMPANY
LAKE CITY, MINNESOTA
Independently Owned and Operated for Four Generations



FLOUR PRODUCTION

A Statistical Service Provided Continuously for Readers of The Northwestern Miller for More than Half a Century.

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to The Northwestern Miller with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	Dec. 18-25, 1960	*Previous week	Dec. 20-27, 1959	Dec. 21-28, 1958	Dec. 22-29, 1957
Northwest	665,638	749,101	491,964	518,883	618,317
Southwest	1,550,398	1,619,991	1,277,147	1,208,116	1,302,104
Buffalo	519,170	526,963	351,735	445,719	543,372
Central and Southeast	563,773	606,786	478,437	423,478	437,431
Pacific Coast	448,890	525,410	343,835	341,822	263,319
Totals	3,747,869	4,028,251	2,943,118	2,938,018	3,164,543
Percentage of total U.S. output	76.3	76.3	75	75	75
Estimated total U.S. production	4,912,017	5,279,490			
Accumulated total this month	17,469,628	12,557,611			

*Revised.

	—Percentage of capacity operated in 5-day week—					Crop year flour production ——July 1 to——	
	Dec. 18-25, 1960	Previous week	Dec. 20-27, 1959	Dec. 21-28, 1958	Dec. 22-29, 1957	Dec. 25, 1960	Dec. 27,* 1959
Northwest	94	105	68	78	89	18,756,547	18,560,971
Southwest	117	120	99	92	126	36,830,659	37,946,732
Buffalo	99	100	71	94	111	12,922,196	13,244,282
Central and S. E.	87	90	74	74	74	15,811,458	15,889,291
Pacific Coast	96	113	74	109	82	11,189,903	11,192,679
Totals	102	108	81	88	93	95,510,763	96,833,955

*Adjusted.

NORTHWEST
Minneapolis

	5-day week capacity	Flour output	% capacity
Dec. 18-25	*194,500	200,527	103
Previous week	*194,500	*222,545	114
Year ago	231,000	132,236	57
Two years ago	237,000	143,443	61
Five-year average			57
Ten-year average			80

*Revised.

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
Dec. 18-25	*514,250	465,111	90
Previous week	*514,250	*526,556	111
Year ago	494,500	359,728	73
Two years ago	430,500	375,440	87
Five-year average			186
Ten-year average			162

*Revised.

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
Dec. 18-25	*651,450	563,773	87
Previous week	*651,450	*606,786	90
Year ago	643,750	478,437	74
Two years ago	570,260	423,478	74
Five-year average			118
Ten-year average			114

*Revised.

SOUTHWEST
Kansas City

	5-day week capacity	Flour output	% capacity
Dec. 18-25	254,250	306,251	120
Previous week	254,250	*323,676	127
Year ago	221,750	218,281	98
Two years ago	287,500	195,197	68
Five-year average			192
Ten-year average			162

*Revised.

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
Dec. 18-25	*1,067,250	1,244,147	117
Prev. week	*1,067,250	*1,296,315	119
Year ago	1,068,800	1,058,866	99
Two years ago	1,032,000	1,012,919	98
Five-year average			130
Ten-year average			143

*Revised.

BUFFALO

	5-day week capacity	Flour output	% capacity
Dec. 18-25	525,500	519,170	99
Previous week	525,500	*526,963	100
Year ago	493,500	351,735	71
Two years ago	475,000	445,719	94
Five-year average			22
Ten-year average			75

*Revised.

PACIFIC COAST

Principal Mills on the Pacific Coast

California, Oregon and Washington Mills

	5-day week capacity	Flour output	% capacity
Dec. 18-25	466,500	448,890	96
Previous week	466,500	*525,410	113
Year ago	466,500	343,835	74
Two years ago	315,000	341,822	109

*Revised.

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to The Northwestern Miller, in sacks, based on five-day week:

	5-day wk. capacity	Wkly. production	% of capacity
Dec. 18-25	*166,000	148,982	90
Previous week	*166,000	*180,068	101
Year ago	156,500	108,079	69

	Crop year production
July 1-Dec. 25, 1960	4,628,007
July 1-Dec. 27, 1959	4,656,318

*Revised.

Canadian Price Adjustments

Price adjustment figures announced by the Canadian Wheat Board and in effect Jan. 4 were as follows: To U.K. and other European destinations via Canadian and U.S. Atlantic ports, also via St. Lawrence, Churchill, Canadian and U.S. Pacific ports, 4⅜¢ bu.; to other countries, excluding U.S. and territories, from Canadian and U.S. Atlantic ports, 15⅛¢ bu.; from St. Lawrence, Churchill, Canadian and U.S. Pacific ports, 15⅝¢ bu. The above adjustment prices apply to wheat milled in Western Canada. For wheat milled in the Bayport area the rate is ½¢ bu. less, while for wheat milled in the Humberstone area and in the Toronto area the rate is 1¢ bu. less. Wheat milled in the Montreal area is 3¢ bu. less. «

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to The Northwestern Miller with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	Dec. 25, 1960-Jan. 1, 1961	*Previous week	Dec. 27, 1959-Jan. 3, 1960	Dec. 28, 1958-Jan. 4, 1959	Dec. 29, 1957-Jan. 5, 1958
Northwest	618,077	665,638	609,896	633,414	751,506
Southwest	1,397,764	1,550,398	1,354,006	1,318,298	1,547,014
Buffalo	546,701	519,170	450,114	554,229	606,877
Central and Southeast	501,745	563,773	544,662	462,722	583,192
Pacific Coast	380,366	448,890	444,412	386,498	323,134
Totals	3,444,653	3,747,869	3,403,090	3,355,161	3,813,723
Percentage of total U.S. output	76.3	76.3	75	75	75
Estimated total U.S. production	4,514,617	4,912,017			

*Revised.

	—Percentage of capacity operated in 5-day week—					Crop year flour production ——July 1 to——	
	Dec. 25, 1960-Jan. 1, 1961	Previous week	Dec. 27, 1959-Jan. 3, 1960	Dec. 28, 1958-Jan. 4, 1959	Dec. 29, 1957-Jan. 5, 1958	Jan. 1, 1961	Jan. 3, 1960
Northwest	87	94	84	95	89	19,374,624	19,170,867
Southwest	106	117	105	100	126	38,228,423	39,300,738
Buffalo	104	99	91	116	111	13,468,897	13,694,396
Central and S.E.	77	87	85	81	74	16,313,203	16,433,953
Pacific Coast	82	96	95	123	82	11,570,269	11,637,091
Totals	94	102	94	100	93	98,955,416	100,237,045

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan 1	194,500	†194,361	100
Previous week	194,500	200,527	103
Year ago	231,000	177,304	77
Two years ago	237,000	171,638	72
Five-year average			57
Ten-year average			80

†Four-day week.

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan. 1	514,250	†423,716	82
Previous week	514,250	465,111	90
Year ago	494,500	432,592	87
Two years ago	430,500	461,776	107
Five-year average			186
Ten-year average			162

†Four-day week.

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan. 1	651,450	†501,745	77
Previous week	651,450	563,773	87
Year ago	643,750	544,662	85
Two years ago	570,260	462,722	81
Five-year average			121
Ten-year average			115

†Four-day week.

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan. 1	254,250	†241,017	95
Previous week	254,250	306,251	120
Year ago	221,750	235,636	106
Two years ago	287,500	230,136	80
Five-year average			192
Ten-year average			162

†Four-day week.

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan. 1	1,067,250	†1,156,747	108
Previous week	1,067,250	1,244,147	117
Year ago	1,068,800	1,118,370	105
Two years ago	1,032,000	1,088,162	105
Five-year average			130
Ten-year average			143

†Four-day week.

BUFFALO

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan 1.	525,500	†546,701	104
Previous week	525,500	519,170	99
Year ago	493,500	450,114	91
Two years ago	475,000	554,229	116
Five-year average			22
Ten-year average			75

†Four-day week.

Millfeed Production

Mills in the Northwest, Southwest and at Buffalo, representing 75% of the combined flour milling capacities of those areas, reported production of 48,355 tons of millfeed for Dec. 25-Jan. 1 compared with an output of 45,552 in the corresponding week a year ago. Production for the previous week of Dec. 18-25 was 51,613, compared to 40,009 in the corresponding week of 1959.

PACIFIC COAST

Principal Mills on the Pacific Coast

California, Oregon and Washington Mills

	5-day week capacity	Flour output	% capacity
Dec. 25-Jan. 1	466,500	†380,366	82
Previous week	466,500	448,890	96
Year ago	466,500	444,412	95
Two years ago	315,000	386,498	123

†Four-day week.

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to The Northwestern Miller, in sacks, based on five-day week:

	5-day wk. capacity	Wkly. production	% of capacity
Dec. 25-Jan. 1	166,000	†167,753	101
Previous week	166,000	148,982	90
Year ago	156,500	138,948	89

	Crop year production
July 1, 1960-Jan. 1, 1961	4,795,760
July 1, 1959-Jan. 3, 1960	4,795,266

†Four-day week.

Committee to Nominate President of MNF

Ben J. Greer, the Pillsbury Co., has been named chairman of the Millers National Federation committee appointed to submit a nominee for MNF president.

Also on the committee are M. A. Briggs, Austin-Heaton Co.; Howard S. Holmes, Chelsea Milling Co.; Burton Roberts, General Mills, Inc., and John J. Vanier, Western Star Mill Co.

The new presidential term begins at the annual convention in April and extends one year. Ellis D. English, Archer-Daniels-Midland Co., currently president, is eligible for re-election. «

DAY

Pneumatic Conveying & Bulk Storage News

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EQUIPMENT ONLY OR A COMPLETE SYSTEM

Storage Fleet Pushes Grain Receipts Up At Buffalo

A marked increase in grain storage vessels wintering at its port has caused the Buffalo Corn Exchange to revise its official, year-end closing figure for 1960 grain receipts upward from the preliminary totals made prior to the end of the navigation season.

Receipts for the year are now reported by the exchange at 77,745,817 bu., compared with the previous year's record low of 73,263,509 bu.

The number of grain laden vessels in the harbor reached 59 before the end of December, reported the exchange. The total includes 42 classed officially as winter fleet arrivals.

Grain afloat in Buffalo's harbor climbed to 20,477,562 bu. before the end of 1960, a sharp rise from the total of 12,230,694 bu. a year earlier.

Although total grain receipts for the season at Buffalo now are considered higher than the previous year—instead of lower as forecast earlier—the volume of ex-lake grain transshipped from Buffalo via rail to Atlantic ports for export slumped to a new low of 1,301,587 bu. This was a drop of 2,442,133 bu. from 1959.

The changing pattern of overseas grain shipments, which averaged 33,957,229 bu. annually via the Great Lakes and the railroads through the Port of Buffalo before the St. Lawrence Seaway opened, is reflected in the 1960 record of direct overseas shipments from Duluth-Superior and Chicago.

These ports shipped nearly 95 million bushels grain directly overseas in 308 foreign ocean ships, a gain of nine million bushels from 1959.

President Comments

Irving M. Hyland, Cargill, Inc., president of the Buffalo Corn Exchange, had this to say about the 1960 grain movement:

"During the year 1959, the Buffalo market experienced a drastic reduction in volume of ex-lake grain moving through our port due to the changed pattern of the movement of Northwest grain for export via the St. Lawrence Seaway.

"This year's statistics confirm the consensus of our market that the low ebb in the grain movement through the Buffalo market has been experienced and that the volume through Buffalo should increase in the future as adjustments are made in merchandising of domestic grain to supply the predicted increased population in the East. Buffalo continues to command a geographic advantage for serving this vast populous eastern area."

LEADING FLOUR IMPORTERS ABROAD

Many of the firms appearing in this list are available to handle the importation of other products besides flour. Some specialize additionally in cereals, some in bakers' sundries and others in feed grains and ingredients. Most of them have connections in adjacent countries and are equipped to handle both import and export business on an extensive basis. For a list of recommended firms dealing in specific commodities or in specific countries write to THE Northwestern MILLER, P.O. Box No. 67, Minneapolis 40, Minn., U.S.A.

ENGLAND

H. Cohen & Co., Ltd.
Hambro House, Vintners' Place
LONDON, E.C. 4
Cable Address: Bortrite, London

Mardorf, Peach & Co., Ltd.
52, Mark Lane LONDON, E.C. 3
Cable Address: "Dorfeach," London

Vaughan Thomas & Co., Ltd.
The Corn Exchange Building
52/57 Mark Lane LONDON, E.C. 3
Cable Address: "Avaumas," London

GERMANY

Einfuhrhandel Mannheim
Hans Werle
MANNHEIM/GERMANY, E2., 1-3
Cable Address: "Einfuhr" Telex 0463270

DENMARK

Brodr. Justesen
COPENHAGEN
Cable Address: "Justesens," Copenhagen

SCOTLAND

Farquhar Brothers
50 Wellington Street GLASGOW,C.2
Cable Address: "Glencairn," Glasgow

McConnell & Reid, Ltd.
19 Waterloo St. GLASGOW
Cable Address: "Marvel," Glasgow

D. T. Russell & Baird, Ltd.
106 Hope Street GLASGOW,C.2

HOLLAND

Bulsing & Heslenfeld N. V.
Established 1885
Damrak 20-22
AMSTERDAM (C)
Cable Address: "Heslenfeld," Amsterdam

STOLP & CO., LTD.
47-48 Damrak AMSTERDAM
Cable Address: "Cleo"

Gebrs. Van Den Bergh's N. V.
ROTTERDAM
Cables: Locomotion Rotterdam

N. V.
Algemeene Handel-en Industrie Maatschappy
"MEELUNIE"
Heerengracht 209 AMSTERDAM

N. V. Agentuur & Commissiehandel
v/h P. C. Vis & Co.
AMSTERDAM
Cable Address: "Visco"

Luchsinger, Meurs & Co.'s
Handelsmaatschappij, N.V.
AMSTERDAM—C.
Cable Address: "Matluch"

M. WITSENBURG JR. N. V.
Postbox 945 AMSTERDAM C.
Cable Address: "Witburg"

GRIPPELING & VERKLEY N. V.
Flour Specialists Since 1889
AMSTERDAM
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Millers in 44 Overseas Nations Read Every Issue of the Miller

LETTERS to The EDITOR

Privileges

From: R. Hugh Uhlmann
Executive Vice President
Standard Milling Co.
Kansas City, Mo.

I enjoyed the article on privileges by F. C. Bisson in the Dec. 12 issue of THE MILLER and, of course, they have many advantages. I would, however, like to offer you two suggestions if the subject is continued.

First: The primary purposes of privileges were two-fold, first and foremost they were a wonderful hedge and an inexpensive one against a position. If a man were long a lot of wheat, by buying puts he could limit his loss and conversely, of course, if he were short he could buy calls. With this safety factor in the market, more people would trade as they could have an absolute limit to their risk.

Second: It is perfectly true that "it would get a person into the market on a shoestring." That is, a small trader, for $7.50 or $10 could get long some wheat, but it also gave him a chance for $7.50 or $10, to have an absolute profit; that is, not exercising his privilege until the market had moved far enough above or below his put or call price to guarantee a profit.

As to the final argument that the government allows a farmer, in the form of purchase agreements, what is the equivalent of a put, this seems to me to be stretching the analysis quite a bit, because the government is actively trying to help the grain farmer and feels no responsibility to the grain speculator. Also, this agreement is not open to the general public but only to a comparatively small group of active grain farmers.

Whether you agree with the government's viewpoint or not, that is what they are trying to do and therefore a logical procedure. What is illogical and unfair and very much more to the point, is that puts and calls are actively traded in stocks. There are a good many put and call brokers advertising daily in the Wall Street Journal and there is a large and active trade in it. This is definitely unfair and discriminatory and, I believe, a much closer analogy.

●

Futures Markets

From: Prof. Roger W. Gray
Food Research Institute
Stanford University
Stanford, Cal.

"The big top man in agricultural economics," whoever he may be, has evoked some interesting rejoinders with his commodity market observation, quoted by your Mr. Cipperly in the Oct. 31 issue. The evidence clearly supports the rejoinders; I should select that of Mr. Richard F. Uhlmann in particular as a straightforward and accurate answer to the question posed. (The Miller, Dec. 12.)

If I could construe the question to have been a straightforward quest for information I should be content to let the episode alone; but as it was a wife beating question from a "highly placed" economist I am disposed to comment.

The evidence which deprives the man's question of any content is readily accessible, having been cited on numerous occasions by his professional colleagues, several of whom specialize in the analysis of evidence bearing upon the performance of commodity futures markets. Let me stress the fact that it is not a mere matter of professional opinion or of economic philosophy that is involved here; but rather a matter of a clear cut cause and effect relationship that is apparent to any who will look at it, and not in any degree an issue among economists who have given careful attention to the functioning of these markets. Why would an economist of such influence and prestige as has been imputed to Mr. X pose a wife beating question in complete disregard of the research based conclusions of his professional colleagues? I prefer not to impugn his motives, but to suggest some alternative ways of answering my question.

I fear that part of the answer is that many—perhaps even most—professional economists in high standing do not possess an adequate understanding of commodity futures markets. This is very largely the fault of other economists like myself who have failed to impart to their colleagues the knowledge born of their own research.

Insofar as this is a cause, the remedy lies in continued, expanded, and improved efforts to interest our colleagues in this work and to convey to them its results.

A related problem is that careful analysis of commodity futures markets has not sufficiently interested those economists who like to work on the frontiers of their subject, and who possess the rare abilities that earn for them, through such work, the esteem of others. Much misleading and superficial information, most of it emanating from the trade or the exchanges, has led economists to believe that there is little here to command the attention of the imaginative and brilliant mind. The platitudes and public relations-oriented statements about futures markets elicit only a yawn from those whose tastes and interests are not captivated by such drivel. Madison Avenue has nothing to contribute to economic understanding of futures markets, and the usual short hand

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descriptions of them contribute little more.

The task of creating economic understanding, never an easy one, is particularly difficult where it involves an institution so complex and so widely misunderstood as futures trading. As was illustrated in the congressional hearings leading to the demise of the onion futures market, defenders of the institution have not always made the right arguments or known how to meet mistaken arguments. The pre-eminent need of the futures markets, in meeting such threats, is for an enlightened public policy. It is all the more deplorable that a highly placed economist, the very personification of enlightened public policy, should present so uninformed and hostile a posture as that manifest in the question quoted by Mr. Cipperly. But those who are determined to further the understanding of futures markets owe him a debt of gratitude for having pinpointed the need to demonstrate the economics of futures trading to economists.

●

Haitian Situation

From: Dr. Max C. Markley
Director
The Markley Laboratories
Minneapolis, Minn.

The article on milling in Haiti is very accurate and timely (The Miller, Dec. 12, 1960). Haiti stands alone in this respect that local milling has reduced flour consumption. I know of no other place where this is true.

The costs of operating a flour mill in the tropics are essentially the same as in the U.S. or Canada. The lower labor cost is offset by a prodigal use of labor, by higher power costs and by higher insurance and interest rates.

Export subsidies on wheat and flour are usually equal, with the advantage, if any, going to the U.S. miller. The price of export wheat is at present the same for equivalent grades at all ports. The disadvantage of the U.S. miller lies in the high freight rates on flour, as compared to the rates on bulk wheat. I will give a couple of examples:

Guatemala:

Flour from Seattle or Vancouver to Champerico	*$22.40/long ton*
Sacked wheat New Orleans to Champerico	*13.25/long ton*
Flour from New Orleans to Puerto Barrios	*13.50/long ton*
Bulk wheat from New Orleans to Puerto Barrios	*7.85/long ton*

The local market in Guatemala takes all the mill feed at favorable prices.

Honduras:

Flour from New Orleans to Puerto Cortes	*$15.70/long ton*
Bulk wheat New Orleans to Puerto Cortes	*7.85/long ton*

Not to exceed half of the mill feed or 11% of the weight of the wheat may have to be exported, probably to Tampa. The mill price on this bran at San Pedro Sula will be approximately the Kansas City price.

There is NO reduction in longshoremen by importing wheat, if any change this item increases. The unions take good care of this situation everywhere except in Haiti.

With bran in Florida $17 above Kansas City the Florida market becomes attractive to the Caribbean millers. It is expected that within a year barges will supplement the line freighters in the Caribbean.

In the larger cities in the tropics, bulk flour handling for the commercial bakeries is not far off. This will give another advantage to the local millers over the importers. No practical bulk flour containers for the export trade have yet been developed.

In Guatemala and El Salvador flour sacks are made from locally grown cotton, while bran is packed in sisal bags also 100% local products.

The major factor in the establishment of the flour mills in the former flour importing countries is the same as in the shift in milling in the U.S. from Minneapolis to Buffalo a few years ago. This factor is simply that it is more profitable to mill close to the market for the flour than close to the areas of wheat production. It is cheaper to ship wheat than to ship flour.

The introduction of a local milling industry in a former importing country does not necessarily upset the flour distribution pattern. For example, the shift in El Salvador is now from 80% imported flour to 100% locally milled in two modern plants. Neither

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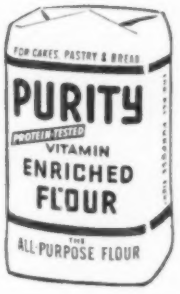

MILLS & FEED PLANTS LOCATED—
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mill will put out its own salesmen. The flour will be sold by the regular distributors with full competition among them. The port of entry will shift from La Libertad to Acajutla, but this is because of the development of modern port facilities at Acajutla.

The basic reason that so many mills were built in the tropics has been that it is more profitable to mill imported wheat than to import flour. This is unpalatable to the U.S. and Canadian millers, but it is the truth. The mills are not built to provide labor; they are not built as monuments to politicians; they are built to make profits.

●

Strontium-90

From: Theodore Earle
859 Swarthmore Avenue
Pacific Palisades, Cal.

With reference to the Editorial Opinion item in the Dec. 12 issue of THE MILLER,

For more than a year I have been stripping contaminated wheat, for my own assays for Strontium-90 removed in the beeswing, at the Nuclear Science Laboratories in Pittsburgh, and for the AEC and their assays. My stripping off 3½% of the epidermal bran coat and their analytical work shows that the SR/90 in the wheat and various flour products is reduced by 25-60%. The balance of the SR/90 is apparently absorbed from the earth.

Under date of Aug. 18, 1960, a report was prepared by Drs. Harley and Rivera in the New York Operations Office of the U.S. Atomic Energy Commission, and printed by their Health and Safety Laboratory. It is a summary of available data on the SR/90 content of foods and of the total diet in the U.S. Based on the Earle Process (and credit given thereto) they included their laboratories' analyses of SR/90 in the beeswing and in stripped wheat fractions of one Kansas wheat sample, in which 25% of the total SR/90 in the wheat was removed by the stripping. Another test, of soft Ohio wheat, showed originally 59 uuc SR/90 in the crude, and after being stripped, showed 23 uuc SR/90/kg in the stripped grain. They gave a report on this in Geneva last fall.

When I wrote my article for your publication (April 14, 1959) on Compaction Tempering, I knew that there could be no cleaner wheat than produced by my process, but I had not gotten into the radio-active fallout tests, nor stripping off of fungicides, etc. All very exciting and encouraging.

Some active workers in the American Association of Cereal Chemists are well aware of the great reduction of SR/90 in flour products, and of the vast amount of research devoted to this aspect of the work, through the Earle stripping process. The Strontium-90 determinations alone take months to complete and at present there are fewer than a half dozen laboratories in the U.S. that can perform these satisfactorily.

It is with pleasure that I contribute this information to you for your further dissemination.

●

Dutch Import Levy

From: H. J. de Koster
President
Netherlands Flour Millers Assn.
Leiden, Holland

As your paper has quite a circulation in Europe, all Netherlands millers have read with interest your editorial article on the proposed increase of the Netherlands levy on flour imports. (THE MILLER, Nov. 28, 1960, page 7.)

I am grateful for this opportunity to give a word of explanation, the more so because I am a fervent free-trader and because I would certainly like to see an expansion of trade between America and Western Europe.

As you indicated in your article, Netherlands millers are not free in their choice of wheats; they are required to use an average of 35% of soft, home grown wheat with a price of $85.92 per metric ton, as compared to a price of $63.17 for American Red Winter (average prices 1959/60, carriage paid).

Now I would like to make the following point: The increase of the levy is not a protectionist measure and does not mean discrimination against the American miller. The American miller has a free choice to buy the best wheat available. The sole purpose of the increase of the levy is to offset the clear price-disadvantage of the Netherlands miller, which results from the compulsory mixing regulation. The price-discrimination against home-milled flour in favor of import flour has just been taken away.

Holland is the largest European market for American flour. This means that Holland, with only 11 out of the nearly 170 million population of the European Economic Community has done its very best to keep the channels of trade open. Your remark about the proposed action "harming the cause of those people who see international cooperation and reciprocal trade as a cure for the world's ills" struck us particularly, since it is practically impossible for Netherlands millers to export flour to the U.S., your quota limit for the Netherlands being only 1,000 lb. per year.

I suggest we all work for better and more open trade regulations on an equitable basis. «

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MARKET QUOTATIONS AT A GLANCE

FLOUR

Jan. 4 Quotations, Based on Carlots, Prompt Delivery

	Kansas City Hard winter	Minneapolis Spring	Buffalo Spring	Chicago	New York	Seattle
Bakery short patent	$5.15@5.25	$5.42@5.52	$6.14@6.24	$...@...	$...@...	$...@...
Bakery standard patent	5.05@5.15	5.32@5.42	6.04@6.14	...@...	...@...	...@...
First clear	4.85@4.98	5.10@5.30	...@...	...@...	...@...	...@...
High gluten	5.40@5.50	5.67@5.77	6.39@6.49	...@...	...@...	...@...
*Family	6.15@7.20	...@7.20	...@7.20	...@...	...@...	...@7.90
*Bakers fancy cake	...@...	...@...	...@...	...@...	...@7.75	...@...
**Straight grade cracker flour	...@...	...@...	...@...	...@5.45	...@...	...@...
*Pastry	...@...	...@...	...@...	...@...	...@...	...@5.46
Rye, white	...@...	3.98@4.08	4.70@4.80	4.26@4.36	...@...	...@...
Rye, medium	...@...	3.78@3.88	4.50@4.60	4.06@4.16	...@...	...@...
Rye, dark	...@...	3.23@3.33	3.95@4.05	3.51@3.61	...@...	...@...
Semolina blend	...@...	...@6.00	...@...	...@...	...@...	...@...

	Toronto	Winnipeg
*Spring top patent	$...@...	$6.25@6.45
**Bakers	...@...	4.75@4.95

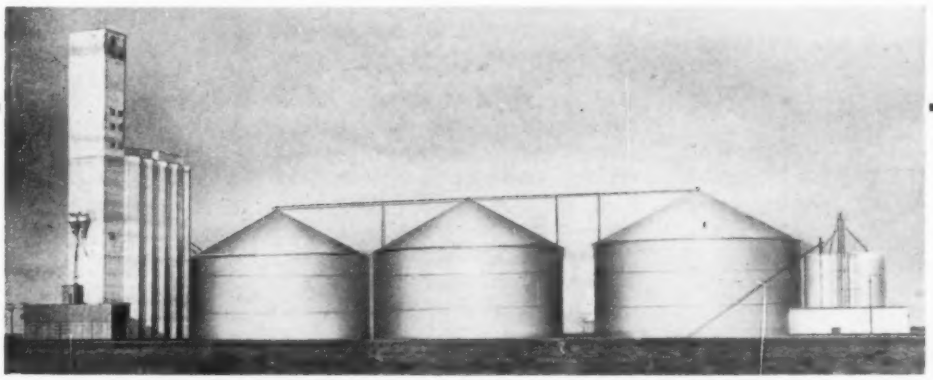
MILLFEED

Jan. 4 Quotations, Based on Carlots, Prompt Delivery

	Minneapolis		Kansas City		Chicago		Seattle	
	Sacked	Bulk	Sacked	Bulk	Sacked	Bulk	Sacked	Bulk
Bran	$45.50@46.00	$40.00@40.50	$40.50@41.00	$37.00@37.50	$47.50@48.00	$42.50@43.00	$45.00@46.00	$41.00@42.00
Std. midds.	44.50@45.00	39.50@40.00	....@....	37.00@37.50	48.50@49.00	43.50@44.00	....@....	....@....
Red dog	47.00@47.50	....@....	....@....	....@....	47.50@48.00	....@....	53.00@54.00	49.00@50.00
Shorts	....@....	....@....	40.00@40.50	37.00@37.50	....@....	....@....	....@....	....@....
Millrun	....@....	....@....	....@....	....@....	....@....	....@....	....@....	....@....

	Bran	Shorts	Middlings
Toronto	$....@....	$....@....	$....@....
*Winnipeg	40.00@42.00	41.00@43.00	47.00@48.00

*Flour and millfeed prices 100 lb. cottons.
**Flour prices 100 lb. papers.



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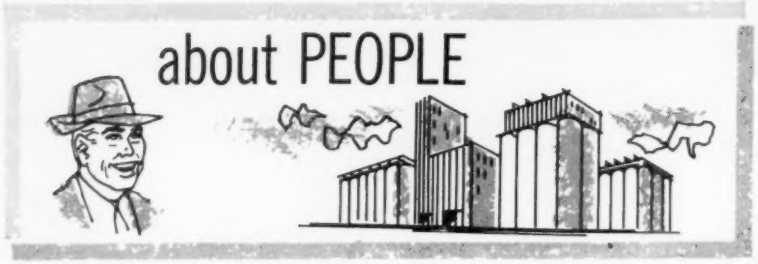

The Superior division of the Daffin Corp., Hopkins, Minn., has a new sales manager. He is **T. E. (Tom) Hartman**, previously manager of terminal sales for the division, which manufactures grain, feed and seed processing equipment. Mr. Hartman will work out of the Daffin headquarters in Hopkins. He was at one time grain buying department manager for the Minneapolis plant of Ralston Purina Co. Mr. Hartman attended Cornell University, Ithaca, N.Y., and is a graduate of Miami University, Oxford, Ohio. He is an associate member of the Grain Elevator and Processing Superintendents; Dist. 4, Association of Operative Millers, and the Northwest Feed Manufacturers Assn.

The fluidizer division of Daffin Corp., Hopkins, Minn., has named an eastern sales representative. He is **Peter M. Rogers**, who will headquarter at Boston.

●

The president of International Milling Co., **Atherton Bean**, has been appointed as chairman and federal reserve agent of the Federal Reserve Bank of Minneapolis for 1961. Mr. Bean has been a director and deputy chairman of the Federal Reserve Bank. He succeeds **Dr. O. B. Jesness**, who has been a director since 1955 and a chairman since Jan. 1 of 1960.

Atherton Bean

●

The Pillsbury Co. has elevated **Donald Pollei**, its plant superintendent at Enid, Okla., since December of 1957, to the job of plant manager. **Claude Nicholson**, who has been in charge of both production and grain procurement approximately 32 years, will remain as Pillsbury's senior representative at the plant.

S. Howes Co., Inc., Silver Creek, N.Y., is expanding its field sales coverage, along with realigning of territories. It's all part of a continuing program of providing service in depth and closer personal contact with the new market areas now served, states **George R. Willis**, vice president of sales. **James Everett**, district sales manager headquartering in Toledo, is now covering Indiana, and has general supervision of the Minneapolis territory plus Iowa, Illinois and Michigan. **Floyd M. Garner**, also a district manager, has enlarged his area to include Oklahoma and Arkansas, in addition to Kansas, Missouri and Nebraska. Two new sales representatives have been named. Representing S. Howes in Louisiana, Mississippi and Alabama is **Dick Clark**, previously associated with equipment sales to feed mills and grain elevators. He also has operated his own seed cleaning plant. **Jerry Fox**, a veteran of 19 years in sales of mill, elevator and seedhouse equipment and farm, feed and fertilizing machinery, has been assigned territories which include Michigan, western Pennsylvania and northern Ohio, headquartering in Jackson, Mich. Mr. Fox specialized in the study of grains, feed and seed while at Michigan State College.

Dick Clark

Floyd M. Garner

Jerry Fox

James Everett

●

One of General Mills, Inc.'s, 20-year veterans, **Gordon W. Ryan**, now bears the title director of sales for the grocery products division. Announcement of the appointment was made by **James P. McFarland**, company vice president and general manager of the division, who has personally managed the company's grocery products national sales operations since last March. At the same time, Mr. Ryan served as central sales manager.

Gordon W. Ryan

In another advancement, **D. F. Swanson**, advertising manager for mixes, becomes assistant director of sales.

●

Canada:

W. H. Pettit

R. G. Dale

Maple Leaf Milling Co., Ltd., has announced three appointments in its milling operations. **Stuart Butler** has been named as general superintendent, while **R. G. Dale** becomes assistant production manager. The third assignment brings **W. H. Pettit** to a position as manager of Maple Leaf's West Toronto plant. Mr. Butler is also president of the Association of Operative Millers.

Stuart Butler

●

Allan M. McGavin, president of McGavin Bakeries, Ltd., Vancouver, has been appointed director of Western Canadian Breweries, Ltd. «

CANADIAN COMMENTARY

Wheat, Flour Movement Shows Decline

The outward movement of Canadian wheat and flour to overseas destinations dropped below comparative totals of a year earlier at the end of November—for the first time in the current crop year. The decline was due to November exports running almost 5 million bushels below the 32.5 million cleared in November, 1959. The August-November movement for the 1960 crop year stands at 107,461,000 bu., compared with 108,601,000 bu. in the same four months of the previous year.

November flour exports were equivalent to 4,440,000 bu. in terms of wheat, or more than 1.1 million bushels over November of the preceding year. The cumulative total for the four months ending with November, however, at 12,416,000 bu., was 700,000 bu., in terms of wheat, under the August-November period of 1959.

Wheat Board Raises Delivery Quotas

To meet increased mill requirements for soft white spring wheat, the Canadian Wheat Board has upped delivery quotas. The delivery quota now is 15 bushels per seeded acre to that type of wheat.

While soft white springs have not been coming forward from farms fast enough to meet mill requirements, deliveries of other types of wheat, particularly durums, since the first of August, have climbed ahead of the comparative totals a year ago. The same is true of the other major grains.

Visible stocks of Canadian wheat in all positions on Dec. 21 stood at 423,700,000 bu. This was almost 44 million bushels greater than the comparative total in December, 1959. The current total included almost 268 million bushels in prairie positions; 39,500,000 at Fort William-Port Arthur; 87,500,000 in eastern elevators; 6,500,000 bu. at the Pacific coast; 4,800,000 bu. at Churchill. Apart from 100,000 bu. in store in the U.S., the remainder of the visible supply was in transit.

During the period to Sept. 21, farmers delivered 19,820,000 bu. durum grades to country elevators. This was three times the comparative total a year earlier. The current visible supply of durum wheat at Fort William-Port Arthur and eastward to Atlantic seaboard positions exceeds 16,500,000 bu.

Primary Receipts Of U.S. Grains

Primary receipts of U.S. grain at eastern Canadian terminal elevators from the opening of navigation, 1960, to the week ended Dec. 21 were just short of 41 million bushels, and almost 26,300,000 bu. moved overseas. Apart from a minor amount of wheat returned to the U.S., and 7,200,000 bu. corn, soybeans and milo combined, used for Canadian domestic consumption, the remainder was still in store in Canada.

Trade with Cuba Draws Criticism

Canada's trade with Cuba has raised a rumpus in the House of Commons, with opposition members criticizing aspects of the negotiations. The government, however, has given every assurance that commodities exported will be used only for civilian use. There are no specific amounts or quantities mentioned, but it is known that Cuban trade mission officials have been in touch with the Canadian Wheat Board and the grain trade for supplies of Canadian wheat. Head of the Cuban mission has indicated that the dollar value of the total trade will be close to $15 million. «

Obituaries

GEORGE H. COPPERS, 58, chairman of the board, National Biscuit Co., at his home in Englewood, N.J. He was a vice president and director of the Biscuit and Cracker Manufacturers Assn. Mr. Coppers started with National Biscuit in 1920 as an office boy. He rose to assistant secretary in 1930, assistant general counsel in 1937, president in 1945, and chairman of the board in 1960.

WILLIAM M. WILLIAMS, 86, former board chairman of B. F. Gump Co., Chicago, in Santa Barbara, Cal. Born in Columbus, Ohio, he devoted most of his business life to B. F. Gump and to Gardner Wire Co.

Mr. Williams joined B. F. Gump in 1907, rose to president of the industrial process machinery manufacturing firm in 1921, and was elected chairman of the board in 1946. He served as board chairman until 1959.

ALONZO E. UDELL, 70, vice president of the Kellogg Co., in Battle Creek, Mich., while attending a dinner with other company officials. Mr. Udell was in charge of purchasing and a member of the firm's board of directors. «

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GRIST of GRINS

Two inmates were talking. "I've made up my mind," blurted one suddenly. "Tomorrow I order my legions to invade England. History will never say that Julius Caesar faltered in pursuing the Britannic campaigns."

"England, eh?" mused the other. "Well, Julius, if I were you . . . and, incidentally, I am . . ."

◆ ◆ ◆

Father listened to his 7-year-old scratch away on his violin while the hound dog howled dismally nearby. As the practice session wore on, father asked the boy, "Can't you play something the dog doesn't know?"

◆ ◆ ◆

First Scientist: I still can't figure how the ancient Egyptians managed to build the pyramids.

Second Scientist: Well, for one thing, they didn't have coffee breaks.

◆ ◆ ◆

"I used to be very shy," writes C. G., "but now my psychiatrist has cured me. I was afraid to answer a phone when it rang. Now I answer whether it rings or not."

◆ ◆ ◆

An American in Wales noticed the word, "Tam Htab" on a mat in his room, "Ah!" he said to the bellboy, "I suppose that's Welsh for Welcome." "No, sir," grinned the boy, "that's the bath mat upside down."

◆ ◆ ◆

Joe: "Is is really true that it's bad luck to have a black cat following you?"

Moe: "That's depends on whether you're a man or a mouse."

◆ ◆ ◆

Sonny: "What does the Chaplain of Congress do, Daddy?"

Daddy: "Oh, he just gets up on a platform, looks at Congress, and prays for the country."

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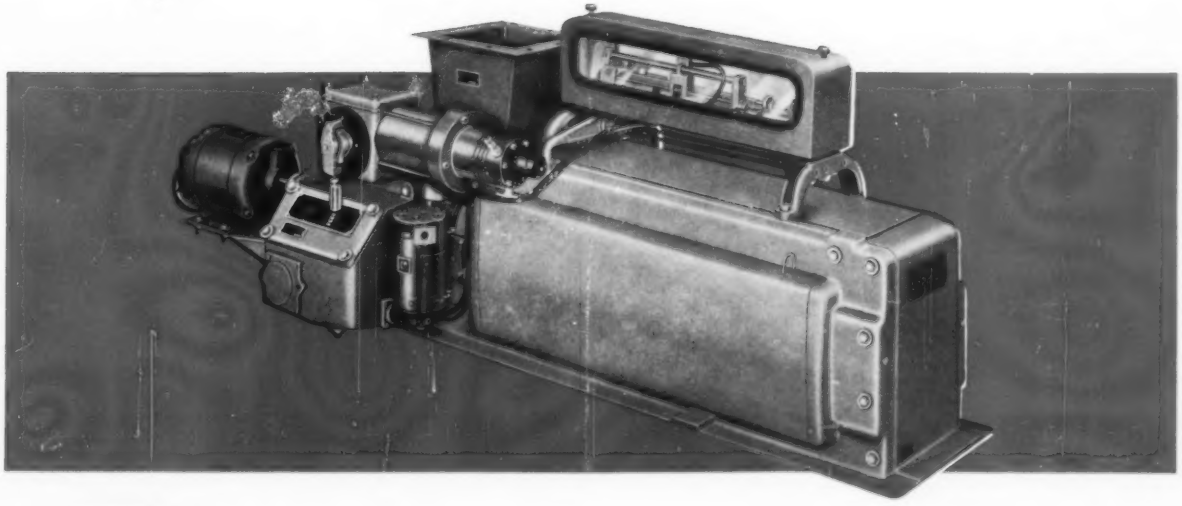

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